De factoren die een rol spelen bij het kiezen van een specialisatie bij de studenten geneeskunde

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Voorwoord

Deze thesis is geschreven in het kader van de master-na-master opleiding huisartsgeneeskunde. Ik heb dit onderwerp gekozen om twee redenen. Als eerste omdat ik zelf heb ervaren dat een specialisatie kiezen geen gemakkelijke opgave is. Als student krijg je tijdens de opleiding geneeskunde continu nieuwe informatie en ervaringen aangeboden. Bovendien leer je door middel van deze ervaringen jezelf beter kennen en kunnen je prioriteiten verschuiven. De tweede reden voor het kiezen van dit onderwerp is het maatschappelijk belang. Het tekort aan huisartsen blijft groeien ondanks verschillende inspanningen, en niet alleen in België.

Tijdens de eerste vergaderingen met mijn promotor werd er vorm gegeven aan het onderzoek. Het startte met het idee om een kwantitatief onderzoek uit te voeren bij de laatstejaars geneeskunde studenten in Vlaanderen. Uiteindelijk werden alle studenten uit Vlaanderen aangeschreven en werden er zowel kwantitatieve als kwalitatieve gegevens verzameld. Via mijn promotor was er contact met een andere onderzoeker uit Hongarije en werd er besloten om mijn thesis als vooronderzoek te gebruiken. Hierdoor is het misschien mogelijk om in de nabije toekomst een grootschalige studie op Europees niveau op te zetten. In het kader van mogelijk vervolgonderzoek werd er besloten om de thesis in het Engels te schrijven.

Bij deze wil ik als eerste mijn promotor bedanken. Al haar opmerkingen, informatie en ideeën hebben bijgedragen tot dit eindresultaat. Wanneer er iets niet duidelijk was, kon er altijd tijd gemaakt worden en dat waardeer ik enorm. Verder wil ik mijn vrienden, familie en huisgenoten bedanken voor de mentale steun die zij mij hebben gegeven tijdens het schrijven van deze thesis.

Abstract

Introduction

Since more than a decade, a major issue in Belgium is the increasing shortage of general practitioners (GPs). Various efforts have been made to promote general practice medicine as a specialization, but without much result. The student's choice of career also determines the supply of different doctors to society and insight in the process of choosing could provide us with useful information. Since this is a growing problem in more European countries, we wanted to compare data of multiple countries.

Goal

1. To determine the percentage and characteristics of students' interest in each specialty and compare them to the quota of the Federal Planning Bureau of Belgium.
2. To determine whether the choice changes and why it changes.
3. To determine the factors of influence when choosing a specialty and their importance.
4. To compare some of the results of Flanders, The Netherlands and Hungary.

Method

Pubmed, Medline, KCE (Federal centre of knowledge for healthcare), previous theses by other GP trainees and other gray literature were searched to see which information was already there. It was decided to conduct a quantitative study. A questionnaire was developed based on two existing questionnaires; a Hungarian one and a Dutch one. The questionnaire was spread to all students from University of Antwerp (UA), Ghent University (UGent), Vrije Universiteit Brussel (VUB) and the KU Leuven (KUL) via the student representatives, the university e-mail or the online platforms.

Results

Surgery, internal medicine and GP are the most preferred specialties by average. When comparing the specialty preference with the quota of the planning commission the largest discrepancies exist in GP, anesthesiology, pediatrics, surgery and gynaecology. There is an oversupply of certain specialists and the largest focus of undersupply remains general practice. The factors: "The will to help", "this is my main interest" and "the relationship with the patients" were rated as most important when starting studying medicine. "Intellectually challenging work", "much variation in pathology", "communicative skills are required" and "much variation in the types of patients" were rated as most important factors when choosing a specialty. Besides, students were also influenced by positive experiences with other doctors, trainers and assistants.

Conclusion

There are large inconsistencies between the preference of the students and the formal advice from the planning committee. The results of this study can help to obtain a right balance between what is needed in health care and what students choose. High-quality internships with GPs e.g. could shift the students' interest more towards general practice.

Introduction

At the end of the medical training, the students have to decide which career they want to follow. The majority of the medicine students will apply for further specialization, but the process of choosing a specialty is long and often already starts before the first year. The career-choice stage of a student's life was found to be one of the most critical and stressful times due to the complex, dynamic and multifactorial nature of the decision-making process (1, 2). It also seems that a lot of students are not sure of their choice since it is reported that a lot of students will change their preferred residency specialty during their medical training and that even a number of physicians will change career during or after their specialist training (3). Understanding the factors that influence the career choice might help us guide the students through this process. It also might prevent switching careers during or after specialist training.

The student's choice of career also determines the supply of different doctors to society. For society it is best to have a balance between specialties that fit the need of the population. Unfortunately, there have been too many candidates for certain specialties each year, but other specializations do not attract as much attention despite the amount of employment opportunities. Since more than a decade, a major issue in Belgium (and other countries like United States, Australia, United Kingdom, Germany, Hungary, etc. (4-8)) is the increasing shortage of general practitioners (GPs). GP shortage will result in decreased access to care for many individuals. This is a well known and burning issue since this problem is a recurring topic in the media (9, 10). The number of municipalities with a general practitioner deficit continues to rise. In these municipalities, a lot of GPs do not accept new patients because of the increasing workload. As a result, people are desperately looking for a general practitioner (10). This shows that family medicine is highly in demand by society, and that not enough students choose to become a GP. A KCE-report (Federal knowledge centre for healthcare) released in 2008 showed that the students do not fill in a quarter of the quota for general practitioners. In addition, a lot of young GPs will never work as a GP or will quit after a couple of years. This phenomenon could lead to a shortage of GPs in the future. Between 2002 and 2005 the number of active GPs decreased with about 7%, while the number of active specialists remained the same. As a result, the GP density decreased in all provinces (11). Determining the factors of influence might reveal new points of application to recruit more GPs.

The annual statistics report of 2017 showed that more than 26% of the Belgian GPs is older than 65 years (12). When they will retire, shortages will even rise further. Moreover, it is known that depression, burn-out and even suicide is high among GPs because of the high workload. As such GPs retention is under pressure. Besides, probably because of this knowledge, the new generation of GPs

will reserve more time for their private life (13). The result is once more a shortage of GPs: the number of GPs decreases and younger GPs tend to treat fewer patients than their older colleagues.

The aging population mainly causes the increasing demand for primary care by society. The older population keeps growing and according to recent data of the Federal Planning Bureau in Belgium, it will continue until 2040. After that, “the aging of the Belgian population will remain stable due to the gradual extinction of the baby boom effect” (14). The aging of the population creates pressure on our healthcare system because the ratio between working and non-working people is decreasing. In other words: the number of patients is increasing more than the number of healthcare providers. This effect is even enhanced by the fact that older people require more care due to, among other things, chronic conditions . (15).

Another KCE-report, also released in 2008, was focused on family medicine/general practice and how to promote attraction and professional loyalty (16). Their research and interviews with final year medicine student shows that the students see the general practitioner profession as a profession with less status and merit than the other specialties. According to this report, the cause of this perception is the lack of information about the specialization, the negative image of general practice in the medical faculty and the low quality of the general practitioner training and internships. The report made recommendations on how to recruit more students for general practice. The KCE recommends upgrading general practice in the medical faculties with a specific selection of students with an affinity for general practice and high-quality lectures and internships at an early stage of medical studies. The working conditions of the GP can be improved by the possibility of career interruption, part-time work and well-organized standby duty. Work in a team, within networks or in a group practice should be encouraged: it breaks through the isolation and allows the delegation of administrative tasks and multidisciplinary work. Furthermore, the KCE advocates maintaining financial support for collaborative practices in collaboration and practices that are started in areas with too few GPs. The differences in income between GPs and specialists should be analyzed and adjusted if the difference proves to be too great. However, the KCE-report of 2015 about health care showed that it is still a burning issue; although the number of graduated doctors increased from 7.1 to 10.2 for 100.000 people, between 2008 and 2013, there was only a minor increase in percentage of students choosing family medicine as their specialty (17).

In the year 2006, the Belgium government established an impulse fund for GPs to stimulate the establishment of new GPs in determined “priority zones”. GPs who start an individual practice or a GP group practice in these zones receive a premium of 20.000 euro. The premium can also be applied for when moving to a priority zone. Besides, an interest-free loan up is given to every GP

who starts a practice. This was expanded in 2008; existing group practices were able to receive a compensation for a receptionist and administrative employee. In 2013, also individual recognized GPs could receive this compensation and the use of a medical tele-secretariat was also appropriate for receiving financial compensation (18, 19). Other measures to make general practice more appealing and to decrease the pressure include the establishment of group practices and general practitioners out-of-hours service centres. A better organization of GPs in local areas reduces the workload.

Despite all the measures mentioned above, there is still a growing shortage of GPs. There are several studies that examine the influencing factors and make recommendations to send more students to general practice. It is even recommended that medical schools might consider introducing elements (personality traits, high affinity for GP) into the admissions process and the medical curriculum that encourages family medicine as a career choice (20-22).

Unfortunately, the literature on the situation in Belgium is limited. No studies have yet been carried out in Flanders with regard to the preference of current students. In addition, little is known about the factors that influence the choice of Flemish students. Most studies have been carried out in a single country and to date no comparative European studies have yet been found. That is why the following objectives are set for this study.

5. To determine the percentage and characteristics of students' interest in each specialty and compare them to the quota of the Federal Planning Bureau of Belgium.
6. To determine whether the choice changes and why it changes.
7. To determine the factors of influence when choosing a specialty and their importance.
8. To compare some of the results of Flanders, The Netherlands and Hungary.

Method

Literature search

Pubmed, Medline, KCE (Federal centre of knowledge for healthcare), previous theses by other GP trainees and other gray literature were searched to see which information was already there. Search terms were: "GP shortage", "medicine students", "medical students", "choice of specialization", "specialization preference", "specialty preference", "factors of influence", "influencing medical career" and "influencing medical students choice". Relevant articles were filtered by reading the abstract.

Questionnaire

It was decided to conduct a quantitative study by using a questionnaire. A questionnaire was developed, based on two existing questionnaires; a Hungarian one (via dr. Peter Vajer, 2017) and a Dutch one (23) (dr. Ronald Batenburg et al., 2017). Both researchers were contacted and agreed to review the questionnaires and to create a new one. For the latter, discussion meetings with dr. Vajer were held, who also decided to conduct the study in Hungary again. Also Estonian researchers were interested and used the questionnaire. Within the timeline of the thesis, only some of the results could be compared between Belgium, Hungary and the Netherlands. However, it is aimed to see this as a preliminary study, which will be carried on in the near future. Depending on the results, it might even be possible to conduct a large-scale study between more European countries in the future. The questionnaire received approval of the ethical comity on 11/11/22 (attachment 2). It was created using survey monkey. In the beginning the goal was to focus on the students in the final year, but during the process, it was decided to extend the study population to all medical students in Flanders, Belgium. Permission was received from the four universities to spread it among the students. It was spread to all medicine students of the University of Antwerp (UA), Ghent University (UGent), Vrije Universiteit Brussel (VUB) and the KU Leuven (KUL) via the student representatives, the university e-mail or the online platforms. Data were received through survey monkey and exported to SPSS version 22 for analysis.

The questionnaire has 20 questions (Q). 6 questions consisted of multiple aspects that has to be scores on a 5-point Likert scale. 2 questions were open-ended. Q 1-5 asked for socio-demographic characteristics. Q 7-10 asked about aspects of the current specialization preference. The full questionnaire is in attachment.

Test of normality (Shapiro-Wilk and Kolmogorov-Smirnov) was used to investigate distribution of the scores. For the comparisons between groups a Kruskal-Wallis test was performed. The answers on the open ended Qs were qualitatively analyzed and coded by two researchers (JJ and NM); they independently searched for categories (data-driven). By discussion, consensus on the categories was found.

Results

Literature

Dr. Ronald Batenburg et al conducted a similar study in the Netherlands (23). They were interested in the current specialty preference among the Dutch students and how this relates to the available specialty training positions. In addition, the change of preference, the determinants of specialty

preference and the determinants of the specialty change were studied. The results will be compared in the discussion.

Selva et al focused their study on why the medical students from western countries show less interest in GP. They conclude that although some students find family medicine appealing, it is regarded as a career of low interest and prestige (24). Boyle V et al conducted a study at Auckland University and concluded that factors in career choice are complex and vary by gender and specialty (25). General practice levels of interest are too low for workforce needs. Marchant and Peckam address the crisis of GP recruitment in a large systematic review (26). They found that some of the most important determinants to increase recruitment in primary care were early exposure to primary care practice, the fit between skills and attributes, and a significant experience in a primary care setting. Factors that seemed to influence retention were sub-specialisation and portfolio careers, and job satisfaction. Shadbolt and Bunker studied the career choices and stated that the most important factors to stimulate recruitment are intrinsic rather than extrinsic. These intrinsic factors include physicians' self-awareness of their skills, and the factors associated with career orientations or choices. These are influenced by demographic variables, lifestyle orientation, and the opportunities for learning and educational development, suggesting that medical graduates primarily look for a career that is stimulating and interesting (27).

Gour N et al studied the factors of influence among Indian students in 2011. They concluded there are many factors playing a role in the specialty selection and preference among the medical students. The most common factors were interest, more income, specialty reputation and job security (28). Pey-chang et al also studied the factors of influence among the students in Taiwan in 2006. This study found that personal intelligence/ability preference and career opportunities were more important factors to the current generation of students in choosing a specialty (21). S. Langeland conducted a study in Norway. It was concluded that the physician's place of graduation appears to be associated with career choice. The universities total contribution in pre-graduate general practice education may be associated with future GP career choice (29).

The literature on the subject of personality and career choice is extensive, but al lots of different models are used and because of this it is difficult to draw conclusions. Decoutere et al. wrote her thesis about the influence of personality traits. The thesis describes difference in personality between Flemish GPs, person-oriented specialists and technically oriented specialists in training. GPs and person-oriented specialists score well on the personality trait 'Pleasantness', while their technically oriented colleagues score well on the 'Openness' and 'Extraversion' attribute. Since the focus of this study is not personality, it is not further noticed (30).

Questionnaire

A total of 6317 medicine students were tried to reach for the survey by email or their student platform. The students from Ghent and Antwerp were contacted a second time because of under-representation. The students from Brussels received the link to the survey later, because of another survey regarding the same subject at the same time. Therefore, they did not receive the survey a second time. 1065 students started the questionnaire, 851 (80%) fully completed. Only those completed surveys were included in the analysis. Table 1 shows the distribution of students over the medical faculties and study years. Most of the students were from Leuven (n = 506, RR = 19%) followed by Antwerp (n = 197, RR = 21%), Brussels (n = 75, RR = 16%) and finally Ghent (n = 73, RR = 3%).

Table 2 shows the characteristics of the students. The largest part was female (67%) and most students were between 18 and 25 years old. The average age of the students was 21.69 (SD 3.312). Seventeen % of the students had one or two parent(s) whom also studied medicine. The students were approximately equally divided over all the years and also between bachelor (46%) and master (54%). As expected, age strongly correlates with study year ($r = .83$, $p < 0.01$).

Table 3 shows the first, second and third preference of the students. We also calculated the total preference because it might be interesting to assess all preferences since a lot of students will switch their preference. When comparing specialties, only the first preference is taken into account. It is also specified by gender and educational phase. The main surgical professions (general and abdominal surgery, cardiothoracic surgery, orthopedics, neurosurgery, urology and plastic, reconstructive and aesthetic surgery) and all the internal specialties were grouped. The received data of question 7 (the preference of specialization) was adjusted on the basis of the open comments. Test of normality (Shapiro-Wilk and Kolmogorov-Smirnov) showed that there was not a normal distribution for the following scores: the reasons to start studying medicine (Q6), the reasons to apply for a specialty (Q11), the aspects when choosing for GP (Q16) and degree of agreement with the statements (Q17). Surgery, internal medicine and GP are the most preferred specialties by average. There are clear differences between males and females on the following specializations: surgery (29.2% vs 15.3%), GP (12.1% vs 19.6%), pediatrics and neonatology (3.9% vs 16.8%) and obstetrics and gynaecology (2.1% vs 7.0%). There are also clear differences between bachelor and master students: GP (9.7% vs 23.6%), pediatrics and neonatology (19.1% vs 7.0%), emergency medicine (9.2% vs 4.8%) and psychiatry (7.4% vs 4.8%).

In general, the students are quite familiar with their first (mean = 3.9 SD = .95), second (mean = 3.6, SD = .96) and third (mean = 3.4 ,SD = 1.00) preference. In 32% of the students, the first choice of

specialty changed during the last twelve months. The answers of this open-ended questionwere read by me and my promotor and divided into categories. One person used the date of the day for his birthday which resulted in 0 age. This was adjusted according to the mean of his year (7th). All the different reasons are listed in table 4. Table 5 shows the comparison between gender, year, university and specialty preference (the five most preferred). A significant higher percentage of master students changed preference (40% vs 20%, $p<0.001$). Also a significant higher percentage of potential GPs changed preference compared to the other specialties (45% vs 29%, $p<0.001$).

The students are not certain, nor uncertain they will specialize in their first preference (mean = 3.0, SD = 1.23). Master students are more certain than bachelor students. Students with GP as first preference are also more certain than students with another first preference.

Only 44% of all the students did receive information about the different specialties and 25% did receive advice on choosing a specialty. Almost 90% indicates they could use more information and/or advice. 79% of the students in the final years (6 and 7) received information about the different specialties and 51% did receive advice on choosing a specialty. However, still 74% indicates they could use more information and/or advice.

The Belgian planning committee of medical supply issued a formal advice in March 2017 in the context of the quota of doctors (31). A comparison between the first preference of the students and the quota was made. Table 6 shows the difference in numbers and percentage. Chart 1 illustrates the difference in percentage. The largest discrepancies exist in the following specialties: GP, anesthesiology, pediatrics, surgery and gynaecology.

Table 7 shows the reasons to start studying medicine and the means of importance for the student. A score of 1 meant the student did not think it was important at all, a score of 5 meant the student thought it was very important and a score of 3 represented a neutral opinion. “The will to help”, “this is my main interest” and “the relationship with the patients” were rated most important in general. There are some significant differences between males and females, between bachelor and master and between GP and the other specialties (as first preference). Females rate “the will to help”, “this is my main interest” and “the relationship with the patients” as more important than males. “Appreciation by the society”, “the appreciation in the professional life”, “salary”, “I want to become a scientist”, “the form of living as a doctor” and “by chance” were rated more important by males. Bachelor students rated “this is my main interest”, “innovation, improvement opportunities”, “the form of living as a doctor” and “the opportunity of working abroad” as more important, while master students rated “by chance” and “family influence” as more important. Students with GP as first preference rate “the relationship with patients” and “the will to help as more important and

“this is my main interest”, “professional challenges”, “I want to become a scientist”, “the opportunity of working abroad”, “innovation, improvement opportunities”, “good job opportunities” as less important when compared to the other specialties.

Table 8 and table 9 show the mean scores of the different factors of influence for the groups and for each factor separate ranked in descending order by their means. Labor relations and factors are rated most important. Working conditions and circumstances were scored neutral, while characteristics of further education and other factors were scored as less important. Table 10 shows the significant differences in factor scores between males and females, between bachelor and master students and between GP and the other specialties (as first preference). The largest significant differences between genders are “good opportunities to work part time”, “good opportunities for conducting scientific research” and “long-term patient relations”. The largest significant differences between bachelor and master students are “positive experiences with doctors /trainers from this specialty”, “positive experiences with assistants from this specialty” and “good opportunities to match private life (flexible working hours)”. Between GP and other specialties the largest significant differences are “a short period of further education (short = 2-4 years versus long = 5-6 years)”, “long-term patient relations” and “interest in (strong) specialized work”.

Almost 24.7% of the students does not want to be a GP, 31.5% does not have GP as their priority but they do not exclude it, 28.9% considers different specialties including GP, 9.5% has GP as their priority but do not exclude other specialties and only 5.4% plans to be a GP.

Table 11 lists the different aspects of general practice and the mean score of importance given by the students who did not exclude GP (n = 641). “The relationship with patients”, “much variation in the types of patients” and “much variation in pathology” were ranked most important.

Table 12 lists different statements and the grade of agreement or disagreement. This question was answered by all respondents (n=851). A score of 5 represented strongly agree, a score of 1 represented strongly disagree and a score of 3 represent a neutral opinion. In general, the students most agreed on “GPs, specialists, other healthcare providers and hospitals should cooperate more closely” and “GPs could have a more important role in health maintenance and prevention”. They mostly disagreed on “most of the cases that GPs treat could be managed by a highly-trained nurse” and “doctors who become GPs are not suitable for other specialties”.

37.9% of the students thinks the medical school contain less GP training than necessary, 53.3% thinks that it contains the right amount of GP training and 8.8% thinks it contains more GP training

than necessary. 56.5% had a positive experience with GP internships during the medical school. Only 5.4% had a negative experience and 38.1% did not had a GP internship.

Discussion

There are not a lot of respondents from Brussels and Ghent. The reason for Brussels might be the other survey regarding the same subject in advance. There is a reasonable amount of respondents in the second year for Ghent, but the amount of respondents in other years is really small and even zero in the 2nd and 3rd master years. The survey was spread to the students from Ghent via the student representatives, but the data suggests that not all the students received the survey. The respondents from Brussels are divided over all the years, but the respondents from Ghent are mostly in their second year. When comparing results, the biases above have to be taken into account.

The main goal of this study was to determine the specialty preference and characteristics of the students and compare this to the quota of doctors established by the planning bureau. We did determine the preference, compared them percentagewise and concluded that the comparison with the quota shows large inconsistencies. We also determined the choice does change in 32% of the students and via qualitative analysis we determined a number of reasons. A number of influencing factors were identified through descriptive statistics. Since this was a preliminary study, only minor comparisons between Flanders, the Netherlands and Hungary were made.

Most of the students were female which corresponds to the current situation (32). 17% of the students had a parent(s) whom also studied medicine so we could state that having a parent with a medical background makes it more likely to start studying medicine. The students who had one or more parent(s) with a medical background also scored “family influence” almost one point higher.

The most popular specialties in general (surgery, internal medicine, GP and pediatrics) were the same as in the NIVEL-study (23) The results from Hungary were about the same, but more students were interested in pediatrics over GP. This might be explained by the fact that almost 73% of their respondents were female. NIVEL also concluded that the interest in socially relevant "specialisms" such as doctors for the mentally handicapped, doctor society and health, specialist in geriatric medicine, and doctor for labor and health is low. The results from our survey are the same: 0.9% chose geriatrics and 0.5% chose social medicine as first preference.

The fact that males are more interested in surgery and that females are more interested in pediatrics and gynaecology is also concluded in the NIVEL-study and other studies (33, 34). Our results show that more females chose GP as first preference, rather than pediatrics. This could be a positive evolution since the comparison with the quota of the planning committee shows there is an

oversupply of pediatricians and a shortage of GPs. Master students prefer GP a lot more than the bachelor students and show less interest for pediatrics and emergency medicine. This could be explained by increased knowledge of the specialties and the preference for a better work- life balance.

The preference of specialty is not stable. During the last 12 months 1 in 3 students changed preference. The qualitative analysis of the reasons why the specialty did change reveals a lot of factors. Since internships were noticed a lot, an early introduction of (small) internships could provide the student more information. The other reactions show that the students are very uncertain and new classes or internships are constantly shifting their preference. A lot of students also show that the work-life balance is important to them when choosing a specialty.

When looking to the characteristics of the students who changed preference, we see master students changed their first preference more compared to the bachelor students. The NIVEL-study concluded similar results, but did not suggest some reasons since they were not asked. Derived from our qualitative study of reasons of change, we might suggest it could be explained because of the internships or increased knowledge of the specialties. Considering master students also rank “good opportunities to match private life” significantly higher than bachelor students, this could also be an influence. Also a significant higher percentage of GPs changed preference, but we see that they are more certain than the other preferences. This is in contrast with the general tendency: students who changed preference are significantly less certain than those who did not change.

The scores of the reasons to start studying medicine are listed in table 7. When comparing groups, we see that there are some significant differences, although they are small. Only the score for “the opportunity of working abroad” is 0.52 higher among other specialties compared to GP. The rest of the differences are smaller and seem less relevant.

In general, the students think the labor relations and labor factors are most important. Positive experiences with doctors, trainers or assistants are important factors for the students in general. The difference between bachelor and master could be explained by the fact most bachelor students have not done an internship yet. Since this is an important factor for all students, high-quality internships with GPs could shift the students’ interest more towards GP. The top ranked labor factors also apply on a career in general practice. Spreading this knowledge to the students could also increase interest in GP. “Sufficient employment” is also rated important, which obviously also applies to a career in general practice. It might be interesting to see which factors other specialties rank more important than the GPs so we could use this to promote attraction. The only factor that could be changed is a high anticipated salary. Factors like “lots of high-tech equipment” and “interest in strong specialized

work" are factors specific to certain specialties. Further analysis of these factors could provide more information.

Only 24.7% of the students do not want to be a GP and almost 15% has GP as their first preference. This indicates that approximately 60% of the respondents could still be convinced to choose GP as their specialty, which is a large potential.

Percentagewise, there are not a lot of respondents from Brussels and Ghent. The reason for Brussels might be the other survey regarding the same subject in advance. There is a reasonable amount of respondents in the second year for Ghent, but the amount of respondents in other years is really small and even zero in the 2nd and 3rd master years. The survey was spread to the students from Ghent via the student representatives, but the data suggests that not all the students received the survey. The respondents from Brussels are divided over all the years, but the respondents from Ghent are mostly in their second year. When comparing results, the biases above have to be taken into account.

The data gathered for this thesis was very extensive and we received a lot of useful information. Most of the results are descriptive statics, but more thorough analysis could reveal more information. Since this was a preliminary study, this database will be used for more research. Maybe it is even possible to conduct a large-scale study between more European countries in the future.

Conclusion

The process of choosing a specialty is a long, dynamic and difficult process. A lot of students will change preferred specialty. New classes or internships, new knowledge about the specialties, uncertainty, increased self-knowledge and many other factors could be identified as a cause of change.

There are large inconsistencies between the preference of the students and the formal advice from the planning committee. There is an oversupply of certain specialists and the largest focus of undersupply remains general practice. If we cannot convince more students to become a GP, the discrepancies will only rise more.

Positive experiences with other doctors, trainers and assistants are important factors when choosing a specialty. Since this is an important factor for all students, high-quality internships with GPs could shift the students' interest more towards GP. The other labor factors, which were ranked important, also apply to general practice and getting this information to the students is necessary. There are

still a lot of potential candidates for GP since 60% can still be convinced to choose GP as their future career.

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Attachment

Table 1. Distribution of students over universities and over years

Kolom1	1st bachelor	2nd bachelor	3rd bachelor	1st master	2nd master	3rd master	4th master	Total
UA	37	24	28	32	27	3	46	197
VUB	4	3	7	13	22	18	6	73
KUL	74	65	79	63	84	84	57	506
UGent	2	68	2	2	0	0	1	75

Table 2. Characteristics of respondents

	n (total = 851)	%
Gender		
Male	281	33.0
Female	881	67.0
Age		
<18	18	2.1
18-25	778	91.4
25-30	46	5.4
>30	9	1.1
Parents*		
No	706	83.0
Mother	37	4.3
Father	63	7.4
Both	45	5.3
Year		
1st bachelor	117	13.7
2nd bachelor	160	18.8
3rd bachelor	116	13.6
1st master	110	12.9
2nd master	133	15.6
3rd master	105	12.3
4th master	110	12.9

*Did the parents study medicine?

Table 3. Specialty preference

Table 3. Specialty preference																								
	Preference 1			Preference 2			Preference 3			Total preference			Male			Female			Bachelor			Master		
	n = 851			n = 851			n = 851			n = 2553			n = 281			n = 570			n = 393			n = 458		
	#	N	%	#	N	%	#	N	%	#	N	%	#	N	%	#	N	%	#	N	%	#	N	%
Surgery	1	169	19.9	2	152	17.9	2	132	15.5	2	453	17.7	1	82	29.2	3	87	15.3	1	85	21.6	2	84	18.3
General practitioner	2	146	17.2	3	109	12.8	3	116	13.6	3	371	14.5	3	34	12.1	1	112	19.6	4	38	9.7	1	108	23.6
Internal medicine	3	126	14.8	1	176	20.7	1	190	22.3	1	492	19.3	2	49	17.4	4	77	13.5	3	58	14.8	3	68	14.8
Pediatrics and neonatology	4	107	12.6	4	70	8.2	5	61	7.2	4	238	9.3	8	11	3.9	2	96	16.8	2	75	19.1	4	32	7.0
Emergency medicine	5	58	6.8	5	64	7.5	4	69	8.1	5	191	7.5	4	23	8.2	6	35	6.1	5	36	9.2	6	22	4.8
Psychiatry	6	51	6.0	8	37	4.3	6	49	5.8	6	137	5.4	5	19	6.8	7	32	5.6	6	29	7.4	7	22	4.8
Obstetrics and gynaecology	7	46	5.4	6	51	6.0	7	37	4.3	7	134	5.2	10	6	2.1	5	40	7.0	8	20	5.1	5	26	5.7
Neurology	8	38	4.5	7	39	4.6	9	27	3.2	8	104	4.1	6	15	5.3	8	23	4.0	7	22	5.6	8	16	3.5
Dermatology	9	20	2.4	10	27	3.2	10	26	3.1	10	73	2.9	15	2	0.7	9	18	3.2	9	7	1.8	11	13	2.8
Otorhinolaryngology	10	18	2.1	12	17	2.0	11	20	2.4	11	55	2.2	11	4	1.4	10	14	2.5	10	5	1.3	10	13	2.8
Anesthesiology	11	17	2.0	9	34	4.0	8	32	3.8	9	83	3.3	7	12	4.3	13	5	0.9	13	3	0.8	9	14	3.1
Ophthalmology	12	13	1.5	11	18	2.1	17	12	1.4	12	43	1.7	9	6	2.1	11	7	1.2	12	3	0.8	12	10	2.2
Physical medicine and rehabilitation	13	11	1.3	13	15	1.8	14	15	1.8	13	41	1.6	14	4	1.4	12	7	1.2	11	5	1.3	14	6	1.3
Radiology	14	8	0.9	15	11	1.3	16	13	1.5	14	32	1.3	13	4	1.4	14	4	0.7	16	2	0.5	13	6	1.3
Clinical biology	15	5	0.6	18	5	0.6	13	15	1.8	16	25	1.0	12	4	1.4	19	1	0.2	14	2	0.5	17	3	0.7
Anatomical pathology	16	5	0.6	16	7	0.8	15	13	1.5	17	25	1.0	16	2	0.7	16	3	0.5	15	2	0.5	18	3	0.7
Other	17	5	0.6	17	6	0.7	18	8	0.9	18	19	0.7	18	2	0.7	17	3	0.5	18	0	0.0	15	5	1.1
Social medicine	18	4	0.5	14	12	1.4	12	16	1.9	15	32	1.3	17	2	0.7	18	2	0.4	17	1	0.3	19	3	0.7
Child- and youth psychiatry	19	4	0.5	19	1	0.1	19	0	0.0	19	5	0.2	19	0	0.0	15	4	0.7	19	0	0.0	16	4	0.9
*Other includes nuclear medicine, tropical medicine, forensic/judicial medicine, scientific research and clinical genetics																								
*Social medicine includes school medicine, occupational medicine, etc)																								

Table 4. Reasons why the choice did change during the last 12 months.

Reasons	**Examples**
Internships	*“Experiences during the internship year”*
Uncertainty	*"I don't really have an idea yet of what I want to do later"*
Lessons/classes/exams	*"I thought the lesson about the cardiovascular system was very interesting"*
Increased knowledge about the specialty	*"I recognized more benefits of working as a GP"*
Work pressure / private life – work balance	*"I had first opted for Paediatrics, it became clear that this would involve a bad work-life balance!"*
Increased self-knowledge / insight	*"I have discovered that I love to work with children and prefer a more personal specialization to something more impersonal like surgery"*
Competition for a training place	*"Because of competition for the training place"*
Role models (doctors/professors)	*"Conversation with plastic surgeon (reconstruction & hand surgery)"*
Experiences from other students / friends	*"Because of friends who have started their specializations"*
Summer school	*"Because of summerschool"*
Specialty training is too heavy	*"I wanted to do gynaecology, but I thought the years of training were too heavy"*
Summer job	*"Increased interest in psychiatry because of a summerschool about psychiatry"*
Job security	*"Surgery offers less job security and is very stressful"*
Technical proceedings	*"Doubt between gastroenterology and haematology: after an internship, I realised that gastroenterology is more to my liking because of its technicalities."*
Scientific research	*"I am not sure yet what I want to do with the study of medicine because I would like to do scientific research."*
Disease (self or family)	*"As my grandfather has recently died of advanced aphasia, my awareness has grown that neurology is a specialization where there is still much to be done."*
Not much respect for the specialty	*"My first choice was radiology, but this internship was some time ago and I gradually noticed that respect for radiologists is limited."*
Sub-specialization	*"Specification of the profession, I moved from paediatrics to neonatology"*
Autonomy	*"Before the internships I had a preference for emergency doctor. The many night hours, relatively long training and especially the limitation in autonomy (working in a hospital and his house rules) have convinced me to be a general practitioner."*
Genetics was recognized as a specialty	*"Because genetics was suddenly recognized in Belgium"*
Thesis	*"Because of my thesis"*

Table 5. Characteristics of students whom changed preferred specialty during last 12 months.

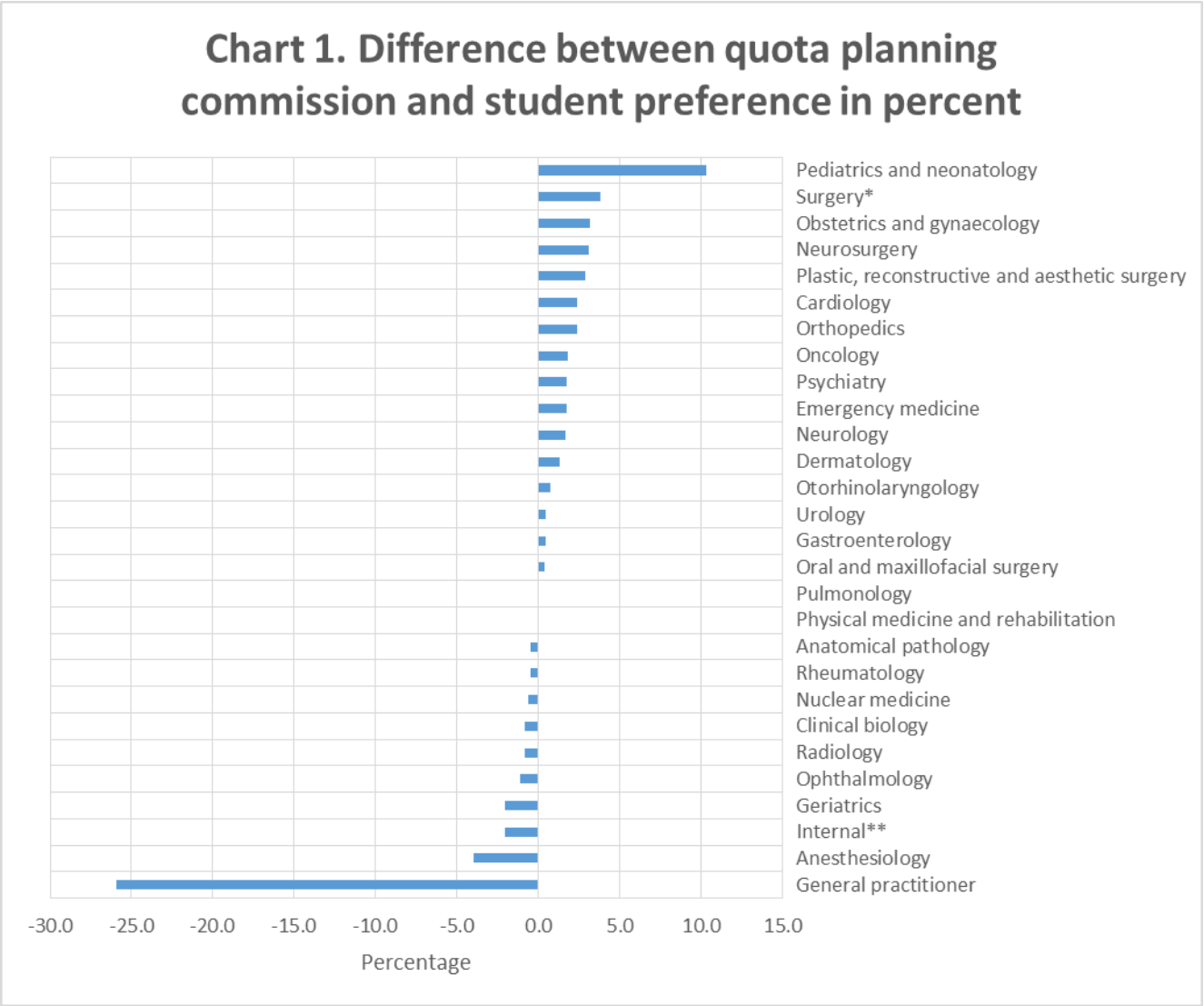
	n	%
1st bachelor	20	17.1
2nd bachelor	34	21.3
3rd bachelor	33	28.4
Bachelor total	87	22.1
1st master	36	32.7
2nd master	56	42.1
3rd master	59	56.2
4th master	34	30.9
Master total	185	40.4
Male	80	28.5
Female	192	33.7
UA	53	26.9
VUB	28	38.4
KUL	171	33.8
UGent	20	26.7
Surgery	44	26.0
General practitioner	65	44.5
Internal medicine	48	38.1
Pediatrics and neonatology	26	24.3
Emergency medicine	11	19.0
Total	272	32.0

Table 6. Comparison between student preference and quota of the planning committee						
	All respondents		Planning commission		Difference	
	n	%	n	%	n	%
General practitioner	146	17.4	362	43.4	-216	-26.0
Anesthesiology	17	2.0	50	6.0	-33	-4.0
Internal**	28	3.3	45	5.4	-17	-2.1
Geriatrics	8	1.0	25	3.0	-17	-2.0
Ophthalmology	13	1.5	22	2.6	-9	-1.1
Radiology	8	1.0	15	1.8	-7	-0.8
Clinical biology	5	0.6	12	1.4	-7	-0.8
Nuclear medicine	1	0.1	6	0.7	-5	-0.6
Rheumatology	7	0.8	11	1.3	-4	-0.5
Anatomical pathology	5	0.6	9	1.1	-4	-0.5
Physical medicine and rehabilitation	11	1.3	11	1.3	0	0.0
Pulmonology	10	1.2	10	1.2	0	0.0
Oral and maxillofacial surgery	9	1.1	6	0.7	3	0.4
Gastroenterology	19	2.3	15	1.8	4	0.5
Urology	14	1.7	10	1.2	4	0.5
Otorhinolaryngology	18	2.1	12	1.4	6	0.7
Dermatology	20	2.4	9	1.1	11	1.3
Neurology	38	4.5	24	2.9	14	1.7
Emergency medicine	58	6.9	43	5.1	15	1.8
Psychiatry	51	6.1	36	4.3	15	1.8
Oncology	22	2.6	7	0.8	15	1.8
Orthopedics	35	4.2	15	1.8	20	2.4
Cardiology	32	3.8	12	1.4	20	2.4
Plastic, reconstructive and aesthetic surgery	29	3.5	5	0.6	24	2.9
Neurosurgery	30	3.6	4	0.5	26	3.1
Obstetrics and gynaecology	46	5.5	19	2.3	27	3.2
Surgery*	52	6.2	20	2.4	32	3.8
Pediatrics and neonatology	107	12.8	20	2.4	87	10.4

*General, abdominal and cardiothoracic

**Nephrology, immunology, endocrinology, hematology,intensive care, etc.

Chart 1. Difference between quota planning commission and student preference in percent.



*General, abdominal and cardiothoracic

**Nephrology, immunology, endocrinology, hematology,intensive care, etc.

Table 7. Mean score of importance for different reasons to start studying medicine

Table 7. Mean score of importance for different reasons to start studying medicine.

	Total		Male vs female				Bachelor vs master				GP vs other specialties					
			Sig. dif.	Male		Female		Sig. dif.	Bachelor		Master		Sig. dif.	GP		Other	
	Mean	SD	P-value	Mean	SD	Mean	SD	P-value	Mean	SD	Mean	SD	P-value	Mean	SD	Mean	SD
This is my main interest	4.48	0.69	<0.001	4.32	0.78	4.56	0.63	<0.001	4.58	0.62	4.40	0.74	0.013	4.37	0.70	4.51	0.69
Professional challenges	4.05	0.72		4.01	0.79	4.07	0.68		4.09	0.68	4.01	0.75	<0.001	3.82	0.68	4.10	0.72
I want to become a scientist	3.11	1.06	<0.001	3.31	1.08	3.01	1.04		3.17	0.99	3.06	1.11	<0.001	2.81	1.03	3.17	1.05
The opportunity of working abroad	2.91	1.10		2.94	1.12	2.90	1.08	<0.001	3.09	1.02	2.76	1.13	<0.001	2.49	1.10	3.00	1.07
Family influence	2.32	1.09		2.40	1.14	2.28	1.06	0.015	2.22	1.06	2.40	1.10		2.42	1.10	2.29	1.08
The form of living as a doctor	3.02	0.99	0.024	3.13	1.03	2.97	0.97	0.053	3.10	0.95	2.95	1.02		2.99	1.03	3.03	0.98
Salary	3.26	0.93	<0.001	3.46	0.97	3.16	0.88		3.22	0.93	3.28	0.92		3.23	0.83	3.26	0.94
By chance	2.09	1.10	0.008	2.25	1.17	2.02	1.06	<0.001	1.94	1.02	2.22	1.15		2.07	1.08	2.10	1.11
The appreciation in the professional life	3.55	0.95	0.002	3.67	0.96	3.50	0.94		3.50	0.95	3.60	0.94		3.45	0.97	3.57	0.94
Appreciation by the society	3.64	0.91	0.008	3.73	0.95	3.59	0.89		3.58	0.95	3.69	0.88		3.66	0.85	3.63	0.92
The relationship with the patients	4.29	0.82	<0.001	4.09	0.92	4.39	0.75		4.27	0.81	4.31	0.83	<0.001	4.62	0.56	4.22	0.85
Innovation, improvement opportunities	3.86	0.84		3.86	0.90	3.86	0.81	<0.001	3.97	0.82	3.77	0.85	<0.001	3.60	0.88	3.91	0.82
Good job opportunities	4.07	0.68		4.07	0.75	4.08	0.65		4.05	0.71	4.10	0.66	0.043	4.00	0.60	4.09	0.70
The will to help	4.52	0.73	<0.001	4.35	0.82	4.60	0.66	0.044	4.57	0.70	4.48	0.75	0.016	4.67	0.53	4.49	0.76
Positive example by another doctor	3.28	1.09		3.25	1.04	3.29	1.11		3.33	1.08	3.23	1.09		3.36	1.05	3.26	1.09

Table 8. Mean score of different categories		
	Mean	SD
Labor relations	3.58	0.76
Labor factors	3.52	0.41
Working conditions	3.06	0.61
Working circumstances	3.04	0.68
Further education	2.70	0.66
Other factors	2.64	0.65

*Matching colors represent the category of each separate factor

Table 9. Mean score of different factors (separate)		
	Mean	SD
Intellectually challenging work	4.02	0.75
Much variation in pathology	3.99	0.83
Communicative skills are required	3.95	0.83
Much variation in the types of patients	3.94	0.88
Positive experiences with doctors /trainers from this specialty	3.90	0.97
Combination of communicative and technical skills	3.90	0.88
Activities that mainly focus on treating patients	3.87	0.82
A lot of teamwork	3.72	0.87
Sufficient employment in this specialty	3.64	0.89
Positive experiences with assistants from this specialty	3.61	1.05
Lots of contact with patients and family members of patients	3.59	1.04
Good opportunities to match private life (flexible working hours)	3.53	1.19
Interest in (strong) specialized work	3.51	1.11
Long-term patient relations	3.47	1.08
Good possibilities to be able to make a good career	3.43	1.03
Technical skills are required	3.42	0.99
Work with a high responsibility	3.40	0.90
Working inside the hospital	3.37	1.08
Activities that mainly focus on accompanying patients in their disease	3.33	0.96
A performance-oriented environment	3.24	1.01
The availability of specialization places	3.20	1.10
A high operating pressure	3.15	1.00
Much to do with psychological problems of patients	3.05	1.16
The specific patient population of this specialism	3.03	1.04
Long days of work	3.00	1.07
Irregular working hours	3.00	1.09
An intensive training program	2.98	0.89
An attractive lifestyle of doctors from this specialty	2.96	1.15
Good opportunities to work part time	2.87	1.22
Activities that mainly focus on prevention	2.84	0.97
Heavy admission requirements of the further education	2.82	1.09
An anticipated high salary	2.77	1.01
Physically hard work	2.75	1.06
Good opportunities for conducting scientific research	2.71	1.17
Lots of routine activities	2.64	0.90
Lots of high-tech technical equipment	2.60	1.04
An advice from doctors / trainers to choose this specialty	2.54	1.15
The prestige of doctors with this specialty	2.39	1.05
A further education close to the place of residence	2.32	1.08
A short period of further education (short = 2-4 years versus long = 5-6 years)	2.17	1.00
Expectations from parents / family to choose this specialty	1.69	1.03

Table 10. Significant difference in mean score of factors between groups.

Table 10. Significant differences in mean scores of factors between groups.

		Gender					Educational phase					First specialy preference				
		Sig. dif.	male		female		Sig. dif.	Bachelor		Master		Sig. dif.	Huisarts		Andere	
		P-value	Mean	SD	Mean	SD	P-value	Mean	SD	Mean	SD	P-value	Mean	SD	Mean	SD
Characteristics of further education	The availability of specialization places	0.003	3.05	1.11	3.28	1.09	<0.001	2.95	1.09	3.42	1.07	0.003	3.64	1.01	3.11	1.10
	A short period of further education	<0.001	1.96	0.94	2.27	1.01	<0.001	2.00	0.87	2.31	1.08	<0.001	3.13	1.10	1.97	0.85
	An intensive training program		2.95	0.92	2.99	0.87		2.94	0.88	3.02	0.90		2.94	0.84	2.99	0.90
	A further education close to the place of residence	0.044	2.21	1.03	2.37	1.09	<0.001	2.12	0.93	2.49	1.16	0.044	2.90	1.13	2.20	1.02
	Heavy admission requirements of the further education	0.002	2.66	1.02	2.91	1.11		2.81	1.04	2.84	1.13	0.002	2.90	1.15	2.81	1.07
Working circumstances	Physically hard work	<0.001	2.52	1.03	2.86	1.05		2.79	0.99	2.71	1.11	<0.001	2.67	1.10	2.76	1.05
	Lots of high-tech technical equipment	<0.001	2.87	1.11	2.47	0.98		2.62	0.98	2.59	1.09	<0.001	2.07	0.86	2.71	1.04
	Working inside the hospital		3.46	1.08	3.33	1.08		3.44	1.04	3.31	1.11		2.62	1.11	3.53	1.01
	Irregular working hours	<0.001	2.79	1.04	3.10	1.10		2.93	0.98	3.05	1.17	<0.001	3.25	1.26	2.94	1.04
	Long days of work	<0.001	2.83	1.02	3.09	1.08	0.002	2.89	0.95	3.09	1.16	<0.001	3.21	1.23	2.96	1.03
	Work with a high responsibility		3.46	0.94	3.37	0.87		3.45	0.85	3.36	0.94		3.09	1.01	3.47	0.86
	A high operating pressure	0.015	3.04	1.00	3.20	0.99		3.12	0.92	3.17	1.06	0.015	3.16	1.12	3.15	0.97
Labor relations	A performance-oriented environment		3.28	1.05	3.22	0.99		3.28	0.92	3.21	1.09		3.03	1.16	3.28	0.98
	Positive experiences with doctors /trainers from this specialty		3.86	0.96	3.92	0.98	<0.001	3.64	1.05	4.12	0.84		4.18	0.88	3.84	0.98
	Positive experiences with assistants from this specialty		3.61	1.01	3.61	1.07	<0.001	3.25	1.03	3.92	0.97		3.64	1.07	3.60	1.05
Working conditions	An anticipated high salary	<0.001	2.98	1.08	2.67	0.97		2.77	1.03	2.78	1.00	<0.001	2.51	0.93	2.83	1.02
	Good opportunities to work part time	<0.001	2.44	1.20	3.08	1.18	<0.001	2.62	1.14	3.09	1.25	<0.001	3.53	1.10	2.73	1.20
	Good opportunities to match private life (flexible working hours)	<0.001	3.24	1.24	3.68	1.13	<0.001	3.27	1.19	3.76	1.14	<0.001	4.32	0.83	3.37	1.19
	Good possibilities to be able to make a good career	<0.001	3.62	1.00	3.34	1.03	<0.001	3.58	0.98	3.30	1.06	<0.001	2.79	1.03	3.56	0.98
	Good opportunities for conducting scientific research	<0.001	3.07	1.17	2.52	1.13		2.78	1.13	2.65	1.20	<0.001	2.03	0.95	2.85	1.17
	A lot of teamwork		3.78	0.84	3.69	0.88	0.007	3.64	0.86	3.79	0.87		3.59	0.88	3.75	0.86
	Intellectually challenging work	0.002	4.13	0.74	3.96	0.75		4.01	0.72	4.03	0.77	0.002	3.71	0.75	4.08	0.73
	Lots of routine activities		2.67	0.92	2.63	0.89		2.63	0.85	2.65	0.94		2.73	0.84	2.62	0.91
	Technical skills are required	0.001	3.57	1.01	3.35	0.97		3.39	0.91	3.45	1.05	<0.001	3.12	0.89	3.48	1.00
	Communicative skills are required	<0.001	3.78	0.92	4.03	0.76	0.022	3.88	0.83	4.00	0.82	<0.001	4.23	0.75	3.89	0.83
	Combination of communicative and technical skills	0.003	3.75	0.96	3.97	0.83	0.037	3.83	0.89	3.95	0.87	0.003	3.91	0.82	3.89	0.90
	Much variation in pathology	0.024	3.91	0.82	4.03	0.84	<0.001	3.85	0.86	4.11	0.80	0.024	4.18	0.86	3.95	0.82
	Much variation in the types of patients	0.013	3.85	0.85	3.98	0.89	<0.001	3.82	0.92	4.04	0.84	0.013	4.40	0.63	3.85	0.90
	Much to do with psychological problems of patients	<0.001	2.84	1.16	3.15	1.15		3.11	1.09	2.99	1.22	<0.001	3.78	0.91	2.90	1.15
	Lots of contact with patients and family members of patients	<0.001	3.33	1.10	3.72	0.98		3.61	0.93	3.58	1.12	<0.001	4.27	0.69	3.45	1.04
	Long-term patient relations	<0.001	3.15	1.10	3.62	1.03	0.024	3.41	0.96	3.51	1.17	<0.001	4.47	0.61	3.26	1.04
	Activities that mainly focus on treating patients	0.02	3.77	0.90	3.92	0.77		3.89	0.78	3.84	0.84	0.02	3.82	0.79	3.88	0.82
	Activities that mainly focus on prevention		2.77	0.98	2.88	0.96		2.82	0.86	2.86	1.05		3.45	0.85	2.72	0.95
	Activities that mainly focus on accompanying patients in their disease	<0.001	3.12	0.99	3.44	0.93		3.34	0.91	3.33	1.01	<0.001	3.88	0.72	3.22	0.97
	Interest in (strong) specialized work	<0.001	3.72	1.04	3.41	1.13	<0.001	3.75	0.98	3.31	1.18	<0.001	2.22	0.84	3.78	0.96
	The specific patient population of this specialism	0.004	2.89	0.96	3.10	1.08		3.05	0.99	3.02	1.09	0.004	2.82	1.09	3.08	1.03
Other factors	The prestige of doctors with this specialty	<0.001	2.69	1.07	2.25	1.01		2.44	1.09	2.35	1.02	<0.001	1.90	0.87	2.50	1.06
	An attractive lifestyle of doctors from this specialty		3.05	1.17	2.91	1.14	<0.001	2.75	1.07	3.13	1.19		3.13	1.22	2.92	1.13
	Sufficient employment in this specialty		3.54	0.99	3.68	0.83	0.003	3.55	0.89	3.71	0.88		3.92	0.77	3.58	0.90
	Expectations from parents / family to choose this specialty		1.73	0.93	1.67	0.87		1.67	0.86	1.71	0.92		1.79	0.88	1.67	0.89
	An advice from doctors / trainers to choose this specialty		2.56	1.16	2.53	1.14		2.47	1.11	2.61	1.18		2.45	1.11	2.56	1.15

Table 11: aspects of general practice		
	Mean	SD
The relationship with patients	4.54	0.62
Much variation in the types of patients	4.17	0.77
Much variation in pathology	4.14	0.76
The GP's appreciation by the patients	4.11	0.75
Technical as well as communicative skills are required	4.08	0.73
Professional independence (you are able to work independently)	3.98	0.92
Independent entity (you are able to work in your own practice)	3.95	0.97
Professionalism and professional achievements	3.73	0.76
The professional appreciation of GPs by other doctors.	3.52	0.90
Financial considerations	2.90	0.91

Table 12: statements		
	Mean	SD
GPs, specialists, other healthcare providers and hospitals should cooperate more closely	4.55	0.57
GPs could have a more important role in health maintenance and prevention	4.50	0.59
GP service should have a more important role in the healthcare system	4.20	0.77
More medical students would choose to become a GP if they could work in groups	3.37	0.83
GP's career provides an opportunity to improve professionally	3.30	0.91
GPs have less potential to pursue a career than the doctors in other clinical fields.	2.55	1.06
GP's prior task is to forward the patients to the appropriate outpatient care	2.52	0.99
As a GP you can have an income as high as any other doctor	2.27	0.87
Most of the cases that GPs treat could be managed by a highly-trained nurse	1.93	0.87
Doctors who become GPs are not suitable for other specialties	1.58	0.74

Addendum: Protocol Onderzoek medisch onderwijs

Titel van het project

De factoren die een invloed hebben bij het kiezen van een specialisatie bij studenten geneeskunde.

Context

De geneeskunde studenten staan in het laatste jaar van hun opleiding voor een moeilijke beslissing, de keuze van specialisaties. Veel studenten hebben bij de aanvang van hun opleiding wel een idee welke richting zij uit willen. Maar bij een groot deel van de studenten kan dit veranderen tijdens de opleiding. In dit onderzoek wil ik bepalen welke factoren een invloed hebben op de specialisatiekeuze.

Doel van de studie

In deze masterproef wil ik onderzoeken welke factoren in welke mate meespelen bij de keuze voor specialisaties bij studenten geneeskunde. Binnen de geneeskunde bestaan de zogenaamde knelpunt specialisaties zoals bijvoorbeeld huisartsgeneeskunde. Door te onderzoeken welke factoren er mee spelen, kunnen we vaststellen hoe we de interesse in deze specialisaties kunnen verhogen. Ook wil ik bepalen of de voorkeurspecialisatie tijdens de opleiding is veranderd en door welke factoren dit komt.

Onderzoekers

Naam: Joey Jarmohamed
Universiteit van inschrijving: Universiteit Antwerpen
Faculteit: geneeskunde
Telefoonnummer: +32494738167
Email: joey.jarmohamed@gmail.com

Afdelingen die betrokken zijn bij de studie

Departement huisartsgeneeskunde van de Universiteit Antwerpen

Invoering

Er zijn al verschillende studies uitgevoerd met betrekking tot de factoren die een invloed hebben op de keuze van specialisatie. Ik heb gezocht naar studies in België en Nederland vanwege de demografische overeenkomsten. In Nederland heeft het NIVEL dit al uitgevoerd. In België zijn ook factoren beschreven in het KCE rapport van 2008. Dit onderzoek wordt mogelijk als vooronderzoek gebruikt om een vergelijkende internationale studie uit te voeren.

Volgende studies met betrekking tot dit onderwerp zijn al uitgevoerd:

- Lorant V, Geerts C, D'Hoore W, et al. Huisartsgeneeskunde: aantrekkingskracht en beroepstrouw bevorderen. Health Services Research (HSR). Brussel: Federaal Kenniscentrum voor de Gezondheidszorg (KCE) 2008. KCE reports 90A (D/2008/10.273/63)

- D. Vergouw, P.J. Heiligers, et al. De Keuzemonitor Geneeskunde: Een nationaal en longitudinaal meetinstrument voor het volgen van specialisatievoorkeuren en het ondersteunen van specialisatiekeuzen van geneeskundestudenten in Nederland. NIVEL, maart 2015.

Studie ontwerp

Het gaat hier om een beschrijvend onderzoek.

Aantal patiënten

Ik wil de vragenlijst laten invullen door alle studenten geneeskunde in Vlaanderen. Het aantal dat wordt opgenomen in de studie, hangt af van de hoeveelheid correct ingevulde vragenlijsten.

Inclusie criteria

Studenten geneeskunde in Vlaanderen.
Correct ingevulde vragenlijst.

Uitsluitingscriteria

Niet correct ingevulde vragenlijst.

Beperkingen en verboden voor de vakken

Er zijn geen beperkingen of verboden.

Randomisatie / verblindende

Er is hier geen sprake van randomisatie of verblinding aangezien het om een beschrijvende studie gaat.

Studie analyse

Aan de hand van vragenlijsten wordt er bepaald welke factoren in welke mate een rol spelen bij de keuze van specialisatie. Opvallende vragenlijsten kan ik nader onderzoeken door mondelinge interviews af te nemen. Met behulp van SPSS zullen de gegevens worden geanalyseerd. De kwalitatieve gegevens worden verwerkt aan de hand van een thematische analyse.

Addendum: Informatie formulier voor de deelnemers

Titel van het project: De factoren die een invloed hebben bij het kiezen van een specialisatie bij studenten geneeskunde.

Het doel van deze studie is om meer inzicht te krijgen in de factoren die meespelen bij de keuze van specialisatie bij studenten geneeskunde in Vlaanderen. Door meer inzicht te krijgen in deze factoren, kunnen we bijvoorbeeld bepalen hoe de zogenaamde knelpuntspecialisaties aantrekkelijker gemaakt kunnen worden. Er werd gekozen voor het laatste jaar omdat deze studenten al praktijkstage hebben gedaan en dus meer praktische kennis hebben van de specialisaties.

Deze studie loopt van de datum van goedkeuring van het ethisch comité tot mei 2018 en zal gegevens verzamelen van 3 jaren geneeskunde (1 jaar dubbele cohorte).

De vragenlijsten worden niet anoniem ingevuld. Het is mogelijk dat u gecontacteerd wordt om uw antwoorden op de vragenlijst mondeling toe te lichten.

U neemt vrijwillig deel aan deze studie en u hebt het recht om uw toestemming voor gelijk welke reden in te trekken. U hoeft hiervoor geen reden op te geven.

Als u uw toestemming intrekt, zullen de gegevens bewaard blijven die tot op het ogenblik van uw stopzetting werden verzameld. Dit om de geldigheid van de studie te garanderen. Er zal geen enkel nieuw gegeven aan de opdrachtgever worden gegeven.

Als u bijkomende informatie wenst, maar ook ingeval van problemen of als u zich zorgen maakt, kan u contact opnemen met de arts-onderzoeker (Jarmohamed, Joey) via het mailadres joey.jarmohamed@gmail.com

Met vriendelijke groeten,

Joey Jarmohamed, huisarts in opleiding

Promotor: Prof. Dr. Nele Michels

Geïnformeerde toestemming

Deelnemer

Ik verklaar dat ik geïnformeerd ben over de aard, het doel, de duur, de eventuele voordelen en risico's van de studie en dat ik weet wat van mij wordt verwacht. Ik heb kennis genomen van het informatiedocument en de bijlagen ervan.

Ik heb alle vragen kunnen stellen die bij me opkwamen en ik heb een duidelijk antwoord gekregen op mijn vragen.

Ik begrijp dat mijn deelname aan deze studie vrijwillig is en dat ik vrij ben mijn deelname aan deze studie stop te zetten zonder dat dit mijn relatie schaadt met het therapeutisch team dat instaat voor mijn gezondheid.

Ik begrijp dat er tijdens mijn deelname aan deze studie gegevens over mij zullen worden verzameld en dat de arts-onderzoeker en de opdrachtgever de vertrouwelijkheid van deze gegevens verzekeren overeenkomstig de Belgische wetgeving ter zake.

Als u aan deze studie deelneemt, vragen wij om volledig mee te werken voor een correct verloop van de studie en de vragen naar waarheid te beantwoorden.

Ik stem in met de verwerking van mijn persoonlijke gegevens volgens de modaliteiten die zijn beschreven in de rubriek over het verzekeren van de vertrouwelijkheid (bijlage XX). Ik geef ook toestemming voor de overdracht naar en verwerking van mijn gecodeerde gegevens in andere landen dan België.

Ik ga ermee akkoord / Ik ga er niet mee akkoord (doorhalen wat niet van toepassing is) dat de studiegegevens die voor de hier vermelde studie worden verzameld, later zullen worden verwerkt, op voorwaarde dat deze verwerking beperkt blijft tot de context van de hier vermelde studie voor een betere kennis van de ziekte en de behandeling ervan.

Ik heb een exemplaar ontvangen van de informatie aan de deelnemer en de geïnformeerde toestemming.

Naam, voornaam, datum en handtekening van de deelnemer

Arts-onderzoeker

Ik ondergetekende [Joey Jarmohamed], arts-onderzoeker / bevoegde onderzoeksmederwerker, verklaar de benodigde informatie inzake deze studie mondeling te hebben verstrekt evenals een exemplaar van het informatiedocument aan de deelnemer te hebben verstrekt.

Ik bevestig dat geen enkele druk op de deelnemer is uitgeoefend om hem/haar te doen toestemmen met deelname aan de studie en ik ben bereid om op alle eventuele bijkomende vragen te antwoorden.

Ik bevestig dat ik werk in overeenstemming met de ethische beginselen zoals vermeld in de "Verklaring van Helsinki", de "Goede klinische praktijk" en de Belgische wet van 7 mei 2004 inzake experimenten op de menselijke persoon.

Naam, Voornaam, Datum en handtekening van de arts-onderzoeker:

Addendum: goedkeuring ethisch comite

UZA / Wilrijkstraat 10 / 2650 Edegem
Parking via Drie Eikenstraat 655
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www.uza.be / BE0874.619.603

Universiteit Antwerpen

ETHISCH COMITE

Prof. dr. N. Michels
Universiteit Antwerpen
ELIZA (Eerstelijns- en Interdisciplinaire Zorg Antwerpen)
Universiteitsplein 1
2610 Wilrijk

VOORZITTER
Prof. dr. Patrick Cras

SECRETARIAAT
tel: 03 821 38 97

De factoren die meespelen bij de keuze van specialisaties bij studenten geneeskunde. (manama huisartsgeneeskunde Joey Jarmohamed).

datum	ons kenmerk	contactpersoon
11/09/2017	17/13/180	Annelies Van Looy Anniek Leeraert Katelijne Bovée ethisch.comite@uza.be

DEFINITIEF GUNSTIG ADVIES

Geachte Collega,

Het Ethisch Comité van het Universitair Ziekenhuis Antwerpen en de Universiteit Antwerpen heeft bovenvermelde studie besproken en geeft een gunstig advies dd. 11/09/2017.

De volgende bijlagen werden volgens de ICH-GCP richtlijnen door het Ethisch Comité goedgekeurd:

- CV onderzoeker
  dr. Jarmohamed
- Informatie- en toestemmingsformulier NL aangepaste versie dd. 31/08/2017
  versie 2
- Protocol aangepaste versie dd. 31/08/2017
  versie 2
- Vragenlijst(en) aangepaste versie dd. 31/08/2017
  NL- ENG, versie 1

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Universiteit Antwerpen

datum
11/09/2017

ons kenmerk
17/13/180

contactpersoon
Annelies Van Looy
Anniek Leeraert
Katelijne Bovée
ethisch.comite@uza.be

Tenslotte verzoeken wij u ons volgende data te melden:
-Startdatum inclusie patiënten
-Datum waarop de studie wordt afgesloten en de reden hiervoor:
- o Nooit opgestart
- o Vroegtijdig stopgezet
- o Einde studie

Met vriendelijke groeten,

Prof. dr. P. Cras
Voorzitter Ethisch Comité

cc: Prof. dr. R. Remmen, UA - Huisartsgeneeskunde, Universiteitsplein 1 - 2610 Wilrijk
Dr. J. Jarmohamed, NVT, Lodewijk Gerritslaan 40 - 2600 Berchem

Addendum: questionnaire (English)

Personalia

1. What is your gender?
    a. Male
    b. Female
2. In what year have you been born?
3. At which University do you study?
    a. University of Antwerp
    b. University of Brussels
    c. University of Leuven
    d. University of Gent
4. What year are you in?
    a. 1st Bachelor
    b. 2nd Bachelor
    c. 3rd Bachelor
    d. 1st master
    e. 2nd master
    f. 3rd master
    g. 4th master
5. Did (one of) your parents study medicine?
    a. No
    b. Yes, my mother
    c. Yes, my father
    d. Yes, both

Specialization choice

1. Please, circle the number that corresponds with your choice of going to medical school. (1 = not at all, 5 = the most)
    a. This is my main interest.
    b. Professional challenges
    c. I want to become a scientist
    d. The opportunity of working abroad
    e. Family influence
    f. The form of living as a doctor
    g. Salary
    h. By chance
    i. The appreciation in the professional life
    j. Innovation, improvement opportunities
    k. Appreciation by the society
    l. The relationship with the patients
    m. Good job opportunities
    n. The will to help
    o. Positive example by another doctor
2. Which field(s) would you like to choose the most after graduation? (Select 1st, 2nd and 3rd choice)
    a. Surgery
        i. General and abdominal surgery
        ii. Cardiothoracic surgery

iii. Orthopedics
iv. Neurosurgery
v. Urology
vi. Plastic, reconstructive and aesthetic surgery
vii. Oral and maxillofacial surgery

b. Internal medicine
i. Cardiology
ii. Pulmonology
iii. Gastroenterology
iv. Rheumatology
v. Geriatrics
vi. Endocrinology
vii. Nephrology
viii. Oncology
ix. Hematology
x. Immunology
xi. General internal medicine

c. Pediatrics and neonatology
d. General practitioner
e. Otorhinolaryngology
f. Dermatology
g. Anesthesiology
h. Obstetrics and gynaecology
i. Microbiology and infectious diseases
j. Clinical biology
k. Anatomical pathology
l. Nuclear medicine
m. Emergency medicine
n. Radiology
o. Physical medicine and rehabilitation
p. Psychiatry
q. Neurology
r. Ophthalmology
s. Social medicine (school medicine, occupational medicine)
t. Other

3. How familiar are you with the specialization of your choice? (1 - not familiar, 5 – very familiar)
    a. First choice
    b. Second choice
    c. Third choice
4. How sure are you that you will specialize in your first choice? (1 - definitely not sure -5 completely sure)
    a. First choice
5. Did your choice changed during the last year?
    a. Yes, why did it change?
    b. No

6. Below are a number of reasons to choose for a certain specialty. Can you point out which of the reasons apply to your first choice of specialization? (1 – not important, 5 – very important)
    a. Characteristics of further education
        i. The availability of specialization places
        ii. A short period of further education (short = 2-4 years versus long = 5-6 years)
        iii. An intensive training program
        iv. A further education close to the place of residence
        v. Heavy admission requirements of the further education
    b. Working circumstances
        i. Physically hard work
        ii. Lots of high-tech technical equipment
        iii. Working inside the hospital
        iv. Regular working hours
        v. Acceptable amount of working hours
        vi. Work with a high responsibility
        vii. A high operating pressure
    c. Labor Relations
        i. A performance-oriented environment
        ii. Positive experiences with doctors /trainers from this specialty
        iii. Positive experiences with assistants from this specialty
    d. Working conditions
        i. Good opportunities to work part time
        ii. Good opportunities to match private life (flexible working hours)
        iii. Good possibilities to be able to make a good career
        iv. Good opportunities for conducting scientific research
        v. Good opportunities to combine with other working activities (academic/teaching career, societal institutions, professional institution,..)
        vi. An anticipated high salary
    e. Labor Factors
        i. A lot of teamwork
        ii. Intellectually challenging work
        iii. Lots of routine activities
        iv. Technical skills are required
        v. Communicative skills are required
        vi. Combination of communicative and technical skills
        vii. Much variation in the types of patients
        viii. Much variation in pathology
        ix. Much to do with psychological problems of patients
        x. Lots of contact with patients and family members of patients
        xi. Long-term patient relations
        xii. Activities that mainly focus on treating patients
        xiii. Activities that mainly focus on prevention
        xiv. Activities that mainly focus on accompanying patients in their disease
        xv. Interest in (strong) specialized work
        xvi. The specific patient population of this specialism
    f. Other factors

i. The prestige of doctors with this specialty
ii. An attractive lifestyle of doctors from this specialty
iii. Sufficient employment in this specialty
iv. Expectations from parents / family to choose this specialty
v. An advice from doctors / trainers to choose this specialty

7. Have you ever received information on the different specializations?
    a. Yes
    b. No
8. Have you ever received advice on which specialization to choose?
    a. Yes
    b. No
9. Do you feel like you could use more information and advice on which specialization to choose?
    a. Yes
    b. No
10. To what extent can you imagine that you become a general practitioner after graduation?
    a. I do not plan to become a GP
    b. My priorities are other fields but I do not exclude GP.
    c. I think about various fields, including GP.
    d. My priority is GP but I consider other fields as well.
    e. I prepare to become a GP.
11. If you may choose to become a GP, what aspects would you consider important? (1 - not important, 5 - very important)
    a. The professional appreciation of GPs by other doctors.
    b. Professionalism and professional achievements
    c. The relationship with patients
    d. Independent entity (you are able to work in your own practice)
    e. Professional independence (you are able to work independently)
    f. Technical as well as communicative skills are required
    g. Much variation in the types of patients
    h. Much variation in pathology
    i. The GP's appreciation by the patients
    j. Financial considerations
12. To what extent do you agree with the following statements? (1 = not at all, 5 = totally)
    a. GP service should have a more important role in the healthcare system
    b. GP's prior task is to forward the patients to the appropriate outpatient care
    c. GP's career provides an opportunity to improve professionally
    d. GPs, specialists, other healthcare providers and hospitals should cooperate more closely
    e. Doctors who become GPs are not suitable for other specialties
    f. As a GP you can have an income as high as any other doctor
    g. Most of the cases that GPs treat could be managed by a highly-trained nurse
    h. More medical students would choose to become a GP if they could work in groups
    i. GPs could have a more important role in health maintenance and prevention
    j. GPs have less potential to pursue a career than the doctors in other clinical fields.
13. What do you think of the GP training in the medical studies?
    a. The medical studies contain much less GP training than it is necessary.
    b. The medical studies contain less GP training than it is necessary.
    c. The medical studies contain the right amount of GP training.
    d. The medical studies contain more GP training than it is necessary.

    e. The medical studies contain much more GP training than it is necessary.
14. Only fill in this question if you already had an internship in a GP practice. Did you have a positive experience with the GP internship during your education?
    a. Yes
    b. No
15. Have you seen GP role models (family, your own GP, television, teachers or tutors,…) who did have a positive influence on your choice of specialization?
    a. Yes
    b. No

Addendum: questionnaire (Dutch)

Personalia

1. Wat is uw geslacht?
    a. Man
    b. Vrouw
2. In welk jaar bent u geboren?
    a. 1950-2002
3. Op welke universiteit studeert u?
    a. Universiteit Antwerpen
    b. Vrije universiteit Brussel
    c. KU Leuven
    d. Universiteit Gent
4. In welk jaar van uw opleiding zit u nu?
    a. 1ste bachelor
    b. 2de bachelor
    c. 3de bachelor
    d. 1e master
    e. 2e master
    f. 3e master
    g. 4e master
5. Heeft (een van) uw ouders geneeskunde gestudeerd?
    a. Nee
    b. Ja, mijn moeder
    c. Ja, mijn vader
    d. Ja, beide

Specialisatie keuze

1. Hieronder vindt u redenen die mensen kunnen hebben om geneeskunde te studeren. Kunt u aangeven in hoeverre deze redenen overeen komen met uw eigen redenen om tot uw voorkeurspecialisme te komen? (1 = zeer onbelangrijk, 5 = zeer belangrijk)
    a. Dit is mijn grootste interesse
    b. Professionele uitdagingen
    c. Ik wil wetenschapper worden
    d. De kans om in het buitenland te werken
    e. Familie invloed
    f. De manier van leven als arts

g. Salaris
h. Toevallig
i. De waardering in het professionele leven
j. Innovatie, verbetermogelijkheden
k. Waardering door de samenleving
l. De relatie met de patiënten
m. Goede banen
n. De wil om te helpen
o. Positief voorbeeld van een andere arts

2. Welke specialisatie wilt u kiezen nadat u afstudeert? (Selecteer uw 1e, 2e en 3e keuze)
    a. Chirurgie
        i. Algemene abdominale chirurgie
        ii. Hart en vaat chirurgie
        iii. Orthopedie
        iv. Neurochirurgie
        v. Urologie
        vi. Plastische, reconstructieve en esthetische chirurgie
        vii. Stomatologie en mond-, kaak- en gezichtschirurgie
    b. Interne geneeskunde
        i. Cardiologie
        ii. Pneumologie
        iii. Gastro-enterologie
        iv. Reumatologie
        v. Geriatrie
        vi. Endocrinologie
        vii. Nefrologie
        viii. Oncologie
        ix. Hematologie
        x. Immunologie
        xi. Algemeen intern medicijn
    c. Kindergeneeskunde en neonatologie
    d. Huisartsgeneeskunde
    e. Oftalmologie
    f. Otorhinolaryngologie
    g. Dermatologie
    h. Anesthesie
    i. Verloskunde en gynaecologie
    j. Klinische biologie
    k. Anatomische pathologie
    l. Nucleaire geneeskunde
    m. Urgentiegeneeskunde
    n. Radiologie
    o. Fysische geneeskunde
    p. Psychiatrie
    q. Neurologie
    r. Sociale geneeskunde (centrum voor leerlingenbegeleiding, arbeidsgeneeskunde)
    s. Andere: _____

3. Geef aan hoe bekend u bent met de specialisatie van uw keuze? (1 – helemaal niet bekend, 5 - zeer bekend)
    a. Eerste keuze
    b. Tweede keuze
    c. Derde keuze
4. Hoe zeker bent u er van dat u daadwerkelijk zult specialiseren in het specialisme van uw voorkeur? (1 – volledig onzeker -5 volledig zeker)
    a. Eerste keuze
    b. Tweede keuze
5. Is uw specialisatievoorkeur in de afgelopen 12 maanden gewijzigd?
    a. Zo ja, waarom?
    b. Nee
6. Hieronder vindt u redenen die mensen kunnen hebben om voor een bepaald specialisme te kiezen. Kunt u aangeven in hoeverre deze redenen overeenkomen met uw eigen redenen om tot uw voorkeurspecialisme te komen? (1 = zeer onbelangrijk, 5 = zeer belangrijk)
    a. Eigenschappen vervolgopleiding
        i. De beschikbaarheid van opleidingsplaatsen
        ii. Een relatief kortdurende vervolgopleiding
        iii. Een intensief opleidingstraject
        iv. Een vervolgopleiding in de buurt van mijn huidige woonplaats
        v. Zware toelatingseisen van de vervolgopleiding
    b. Arbeidsomstandigheden
        i. Fysiek zwaar werk
        ii. Veel met hoogstaand technisch materieel werken
        iii. Binnen het ziekenhuis werken
        iv. Onregelmatige werkuren
        v. Lange werkdagen
        vi. Hoog verantwoordelijk werk
        vii. Een hoge werkdruk
    c. Arbeidsverhoudingen
        i. Een prestatiegerichte omgeving
        ii. Positieve ervaringen met artsen/opleiders uit dit specialisme
        iii. Positieve ervaringen met assistenten uit dit specialisme
    d. Arbeidsvoorwaarden
        i. Een hoog verwacht salaris
        ii. Goede mogelijkheden om parttime te kunnen werken
        iii. Goede mogelijkheden om werk op privéleven af te stemmen (flexibele werkuren)
        iv. Goede mogelijkheden om in dit specialisme carrière te kunnen maken
        v. Goede mogelijkheden tot het uitvoeren van wetenschappelijk onderzoek
    e. Arbeidsinhoudelijke factoren
        i. Veel in teamverband werken
        ii. Intellectueel uitdagend werk
        iii. Veel routinematige werkzaamheden
        iv. Technische vaardigheden worden vereist
        v. Communicatieve vaardigheden worden vereist
        vi. Combinatie van communicatieve en technische vaardigheden
        vii. Veel variatie in pathologie

viii. Veel variatie in type patiënten
ix. Veel te maken hebben met psychologische problemen van patiënten
x. Veel contact met patiënten en familieleden van patiënten
xi. Langdurige patiëntrelaties
xii. Werkzaamheden die voornamelijk gericht zijn op het behandelen van patiënten
xiii. Werkzaamheden die voornamelijk gericht zijn op preventie
xiv. Werkzaamheden die voornamelijk gericht zijn op het begeleiden van patiënten in hun ziekte
xv. Interesse in (sterk) gespecialiseerd werk
xvi. De specifieke patiëntenpopulatie van dit specialisme

f. Overige factoren
i. Het hoge aanzien van artsen uit dit specialisme
ii. Een aantrekkelijke leefstijl van artsen uit dit specialisme
iii. Voldoende werkgelegenheid in dit specialisme
iv. De verwachting van ouders/familie om dit specialisme te kiezen
v. Een advies van artsen/ opleiders om dit specialisme te kiezen

7. Heeft u ooit informatie ontvangen over de verschillende specialisaties?
   a. Ja
   b. Nee
8. Heeft u ooit advies gekregen in verband met het kiezen van een specialisatie?
   a. Ja
   b. Nee
9. Heb je het gevoel dat je meer informatie en advies kunt gebruiken over welke specialisatie je moet kiezen?
   a. Ja
   b. Nee
10. In hoeverre kan je je voorstellen dat je na de afstuderen een huisarts wordt?
    a. Ik ben niet van plan huisarts te worden
    b. Mijn prioriteiten zijn andere gebieden, maar ik uitsluit huisarts niet uit
    c. Ik denk aan verschillende velden, inclusief huisarts.
    d. Mijn prioriteit is huisarts, maar ik beschouw ook andere velden.
    e. Ik bereid me voor om een huisarts te worden.
11. Als u ervoor kunt kiezen om huisarts te worden, welke aspecten vind u belangrijk? (1 - niet belangrijk, 5 - heel belangrijk)
    a. De professionele waardering van huisartsen door andere artsen
    b. Professionaliteit en professionele prestaties
    c. De relatie met patiënten
    d. Onafhankelijke entiteit (je kan in je eigen praktijk werken)
    e. Professionele onafhankelijkheid (u kunt zelfstandig werken)
    f. Technische en communicatieve vaardigheden zijn nodig
    g. Veel variatie in het type patiënten
    h. Veel variatie in pathologie
    i. De waardering van de huisarts door de patiënten
    j. Financiële overwegingen
12. In hoeverre ga je akkoord met de volgende uitspraken? (1 = volledig niet akkoord, 5 = volledig wel akkoord)
    a. Huisartsgeneeskunde moet een belangrijker rol in het zorgsysteem hebben

b. De hoofdtaak van de huisarts is om de patiënten door te sturen naar de juiste specialist
c. Een carrière als huisarts biedt de mogelijkheid om professioneel te groeien
d. Huisartsen, specialisten, andere zorgverleners en ziekenhuizen moeten nauw samenwerken
e. Artsen die huisarts worden, zijn niet geschikt voor andere specialiteiten
f. Als huisarts is je inkomen net zo hoog als eender welke arts
g. De meeste casussen die de huisarts ziet kunnen door een hoog opgeleide verpleegkundige worden beheerd
h. Meer geneeskunde studenten zouden ervoor kiezen om huisarts te worden als ze in groep kunnen werken
i. Huisartsen spelen een belangrijke rol in de gezondheidszorg en bij preventie van ziekten
j. Huisartsen hebben minder ambitie om carrière te maken dan de artsen op andere klinische gebieden

13. Wat vind je van de huisartsgeneeskundige opleiding in de medische studies?
    a. De studie geneeskunde bevat veel minder training dan nodig is om huisarts te worden
    b. De studie geneeskunde bevat minder training dan nodig is om huisarts te worden
    c. De studie geneeskunde bevat ongeveer genoeg training om huisarts te worden
    d. De studie geneeskunde bevat meer training dan nodig is om huisarts te worden
    e. De studie geneeskunde bevat veel meer training dan nodig is om huisarts te worden
14. Vul deze vraag alleen in als u al een stage hebt gedaan in een huisartsenpraktijk. Heb je een positieve ervaring gehad met de stageopleiding tijdens je opleiding?
    a. Ja
    b. Nee
15. Heb je huisartsen als rolmodellen gezien (familie, je eigen huisarts, televisie, docenten of docenten ...) en die een positieve invloed hebben op je keuze om huisarts te worden?
    a. Ja
    b. Nee

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