The effects of gender discrimination on medical students‘ choice of specialty for their (junior) residency – a survey among medical students in Germany

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The effects of gender discrimination on medical students' choice of specialty for their (junior) residency – a survey among medical students in Germany

Jule Stock[1*] and Andrea Kaifie[1,2]

Abstract

Background Gender discrimination is known to affect societies in many different settings. Medical education is no exception. This study focusses on the consequences, gender discrimination can have on medical students and their choice of (junior) residency specialty.

Methods An online questionnaire was developed and distributed among the 40 medical faculties in Germany. The study population contained medical students in their fifth and sixth academic year.

Results The survey's participants consisted of 759 students from 31 universities. Female medical students experienced significantly more gender discrimination compared to their male colleagues (f = 487, 87.9% vs. m = 76, 45.8%, $p < 0.0001$). The specialties with the most reported gender discrimination were family medicine (f = 180, 42.9% vs. m = 15, 23.8%, $p < 0.05$), followed by surgery (f = 369, 87.4% vs. m = 44, 69.8%, $p < 0.05$), internal medicine (f = 282, 67.3% vs. m = 37, 58.7%, ns), orthopaedics/casualty surgery (f = 270, 65.1% vs. m = 32, 50.8%, $p < 0.05$), and gynaecology (women (f = 142, 34.1% vs. m = 34, 54.0%, $p < 0.05$). Gynaecology was the only specialty, men experienced more discrimination compared to women. Among the students that ever changed their specialty of choice (f = 346 (73.3%) m = 95 (72%)), significantly more women than men claimed gender discrimination to be one of the main three reasons for their specialty choice (f = 42, 12.1% vs. m = 1, 1.1%, $p < 0.05$). In addition, 53 students (f = 50 (10.6%) m = 3 (2.3%)) stated to rule out a specialty from the beginning due to gender discrimination.

Conclusion Gender discrimination is frequently experienced by medical students in Germany. It influences their choice of medical specialty directly. Our data suggest a fundamental problem that proposes and implicates certain specialties to be attractive for only one gender.

Keywords Medical education, Sexism, Harassment, Degradation

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Background

Since they have first been accepted to German medical universities in the last years of the 19th century, the number of female medical students has increased over the time. While in 1993 45.7% (41,417) of the medical students in Germany were women, they have obtained the majority of 64.36% (69,597) of the total 108,130 medical university places in 2022 [1]. The admission criteria of German medical schools might be of interest as one possible reason for this feminization of the medical field. Apart of some exceptions, there are three main centrally managed admission categories. Students can be admitted either based on the final school grade, the time of waiting for admission or the university's choice (often based on grades, additional tests or interviews). Since the average of female students tend to reach slightly higher final grades than their male fellow students (f=2.27 vs. m=2.45) [2], they might nowadays secure a place in medical school more easily. However, that does not explain the worldwide increase of women in the medical field [3, 4], as the admission criteria to medical schools differ between the countries. For Germany, a representative from an official medical association came to the conclusion that the high workload and responsibility and the worse pay in comparison to less responsible jobs might be a reason for the feminization as it became less attractive for men [5].

This high percentage of women in medical schools is however not represented in every medical specialty. Statistics of resident German doctors show, that women are far less often found in the fields of urology, orthopaedics and surgery, while less men practice as paediatricians or psychiatrists [6].

That raises the question, which factors influence the medical students' decision, when it comes to choosing their medical specialty. There are significant differences on specialty choices between female and male students, especially for paediatrics, orthopaedics and surgery [7]. The lack of role models of the own gender in the different specialties might be one reason [8], making the genders' predominance in certain specialties a self-fulfilling prophecy. A study, that has been carried out in the US, identifies gender discrimination as another influencing factor on American medical students' specialty and residency choice [9].

Gender discrimination is a frequently experienced phenomenon amongst medical students [10–15], that is known to have negative psychological impacts, such as an increased risk of depression, anxiety, emotional exhaustion or substance abuse [11]. A German pilot study in the field of gender discrimination at a medical school indicated, that gender discrimination can lead to negative perceptions of ones' opportunities, as well [10]. Their research led the authors of this study believe, that gender discrimination, that was predominantly experienced by women, can have influence on the students' future career path. However, the nature of this influence was not specified.

To contribute against inequality in medical education, this study is going to examine the gender discrimination experiences of medical students throughout Germany and evaluate whether it has a significant influence on the specialty choice and therefore the predominance of one gender in certain specialties.

Methods

Development of questionnaire

The online questionnaire developed contained 34 questions and was mainly adapted from pre-existing questionnaires that have already been used in the field [10, 16]. The participants were divided into two answer categories, one asking about experienced gender discrimination and one about witnessed gender discrimination. Prior to the questions about gender discrimination, the questionnaire gave a short definition of gender discrimination and microaggressions to sensitize the participants and to help them categorise their experienced or witnessed incidents of discrimination. For some variables, examples were given for explanatory reasons. For example: "Unwanted persistent affections (e.g. flirting, asking on dates)", "public humiliation (e.g. to show up somebody on rounds)".

The questionnaire was divided into sections including:

- Sociodemographic data: university, phase of studies, gender, age (religion and parents' highest educational qualification were optional).
- Current specialty choice and desirable work qualities: qualities had to be assessed with a 4-point Likert scale "unimportant, less important, important, very important".
- Experienced or witnessed gender discrimination: form, aggressors, setting.
- Perceptions of dis-/advantage because of gender.
- Changes made concerning the specialty of choice and their reasons.
- Receiving advise for/against choosing a specialty due to the gender.

When asking about forms, setting or aggressors of discrimination, a five-point Likert scale was used, containing the values "never, rarely, occasionally, often, very often". The questions concerning gender discrimination were adapted from the questionnaire used in the research article of Jendretzky et al. [10]. The items, inquiring the specialty choices and desirable work qualities, were partially used from the "Berufsmonitoring Medizinstudierender 2018" [16], which questioned approximately 13000 medical students in Germany on work expectations and

career goals. For settings or forms of gender discrimination, it was possible to give multiple answers due to possible multiple experienced or witnessed incidents. We pretested the questionnaire in a group of 15 voluntary participants and added small alterations in the final quationnaire.

Data collection

Data was collected over a period of 44 days from 2023/01/16 to 2023/02/28. For the questionnaire distribution and data assembly we used SoSci Survey [17], accessible for the participants via the website www.soscisurvey.de. The link for the questionnaire was distributed among 40 German medical faculties by E-Mail, WhatsApp, Instagram and online fora. To increase the response rate, the faculties were asked to post reminders to the survey after about 25 days, what led to another small peak of responses. Altogether, students from 31 medical faculties filled out the questionnaire. To rule out participation bias, the study's focus on gender discrimination was not apparent in the cover letter. It was introduced after the sociodemographic data and specialty choice questions. The cover letter stated, that the students will be participating in "a survey to figure out, which factors influence medical students' decision when it comes to choosing a specialty for the junior-/residency."

Table 1 Participants' sociodemograohic data and current specialties of choice

	female	male	diverse	Total
Participants	577 (76.0%)	174 (22.9%)	8 (1.1%)	759 (100%)
Mean age (years)	25.4	26.6	26.5	25.7
Phase of Studies				
9. Semester	230	65	2	297
10. Semester	37	6	3	46
Second state exam ahead	105	25	1	131
Second state exam passed	29	8	0	37
Junior residency	176	70	2	248
Current specialty of Choice	**f = 559**	**m = 165**		*n* = 724
Family medicine	57 (10.2%)	8 (4.9%)		65 (8.9%)
Anaesthesiology	79 (14.1%)	37 (22.4%)		116 (16.0%)
Ophthalmology	11 (2.0%)	3 (1.8%)		14 (1.9%)
Surgery	40 (7.2%)	9 (5.5%)		49 (6.8%)
Gynaecology	69 (12.3%)	2 (1.2%)		71 (9.8%)
Otorhinolaryngology	9 (1.6%)	2 (1.2%)		11 (1.5%)
Dermatology	13 (2.3%)	0 (0%)		13 (1.8%)
Internal medicine	53 (9.5%)	28 (17.0%)		81 (11.2%)
Paediatrics	60 (10.7%)	12 (7.3%)		72 (9.9%)
Neurology	40 (7.1%)	12 (7.3%)		52 (7.2%)
Psychiatry	42 (7.5%)	10 (6.1%)		52 (7.2%)
Radiology	17 (3.0%)	10 (6.1%)		27 (3.7%)
Orthopaedics	13 (2.3%)	12 (7.3%)		25 (3.5%)
Urology	8 (1.4%)	5 (3.0%)		13 (1.8%)
Other	48 (8.6%)	15 (9.1%)		63 (8.7%)

Statistical analysis

The data collected via soscisurvey.de was downloaded and processed in Excel. The questionnaire's Likert scale values of the questions concerning:

- the experienced or witnessed discrimination (whether it ever happened, forms, setting and specialties).
- regarding the own gender as dis-/advantage.
- the gender of the aggressors.
- feeling like having to put in more effort compared to the other gender.

were dichotomised into "never" or "ever" experienced. The queried desired work qualities were dichotomised into "less important" (un- and less important) or "important" ((very) important). Due to the small total number of participants that identified as diverse ($n=8$), the group was not included in descriptive statistics or tests for statistical significance. The statistical analysis was carried out with the use of "SAS OnDemand for Academics". The categorical variables were analysed using frequencies. The Chi^2-Test was used to determine significant differences between the male and female students, indicating statistical significance with a value of $p<0.05$.

Results

Participants

The participants (Table 1) of this study included medical students from 31 of 40 German medical faculties from the ninth semester to the practical year (the last academic year in German medical school) covering enrolled students from the 5th and 6th year. 759 participants were matching these criteria, 603 of them completed the questionnaire. The ratio between the gender categories in the study population differed from that of all German medical students with a higher proportion of female students in our study (f=63.8%, m=36.2%, d=no data for Germany [1] vs. f=76.0%, m=22.9%, diverse=1.1% in our study population).

Current specialty of choice and desirable work qualities

In addition to the students` current specialty of choice (Table 1), participants were asked to state the personal importance of certain statements regarding their future work. We observed significant differences between men

and women in four of the twelve categories. Women found "flexible working hours" (f=381, 68.8% vs. m=92, 56.4%, p=0.0035) as well as "regular working hours" (f=462, 83.2% vs. m=124, 75.6%, p=0.027) and "knowing not only the medical history, but also the life story of a patient" (f=353, 63.6% vs. m=78, 47.6%, p=0.0002) significantly more important compared to men. In.

the group of men, "good career options" (n=110, 67.5%) were regarded as significantly more important compared to women (n=273, 49,4%, p<0.0001). Most often considered as important (86.4%) was "achieving a good work-life balance", with no statistically significant difference between men and women.

Gender discrimination

Gender discrimination among medical students during their academic career was experienced significantly more often by women than men (f=487, 87.9% vs. m=76, 45.8%, p<0.0001). Men, that never experienced gender discrimination themselves, stated more often to have witnessed gender discrimination than the women that have never been discriminated (f=25, 37.9% vs. m 64, 72.7%).

As shown in Fig. 1, the specialties, women mostly experienced gender discrimination in were family medicine (f=180, 42.9% vs. m=15, 23.8%, p=0.0041), surgery (f=369, 87.4% vs. m=44, 69.8%, p=0.0002), internal medicine (f=282, 67.3% vs. m=37, 58.7%, ns) and orthopaedics/casualty surgery (f=270, 65.1% vs. m=32, 50.8%, p=0.0287). Except for internal medicine, gender discrimination, experienced by men, was significantly less frequent compared to women. Men stated to have been discriminated in gynaecology significantly more often than women (f=142, 34.1% vs. m=34, 54.0%, p=0.0022).

Table 2 shows the settings where n=560 students were either discriminated themselves or witnessed gender discrimination. The three most often selected settings were nursing practice internship (n=465, 83%), clinical traineeships (n=464, 82.9%) and university lectures and classes (n=434, 77.5%). Altogether, n=47 (8.4%) of the participants reported to have experienced gender discrimination in the nursing practice internship "very often". 78.1% (n=139) of students in their junior residency witnessed or experienced gender discrimination in this setting.

Experienced as well as witnessed forms of gender discrimination can be found in Table 2. Women have experienced gender discrimination mainly in form of degrading jokes and insults (f=409, 93.4% vs. m=45, 69.2%, p<0.0001), degrading gestures (f=251, 57.3% vs. m=25, 38.5%, p=0.0044), degrading nicknames (f=389, 88.8% vs. m=49, 75.4%, p=0.0021), unfounded questioning of one's knowledge (f=347, 79.2% vs. m=38, 58.5%, p=0.0002), unwanted touch (f=266, 60.7% vs. m=28, 43.1%, p=0.007) and unwanted inappropriate compliments (f=329, 75.1% vs. m=33, 50.8%, p<0.0001) significantly more often compared to the male students. Male students reported to have experienced, more insults and verbal abuse (f=31.5% vs. m=35.4%, n.s.) and public humiliation (f=39.7% vs. m=41.5, n.s.).

The main aggressor of experienced and witnessed gender discrimination were patients (n=406, 72.9%) followed by senior physicians (n=401, 72%) *(*Fig. 2*)*.

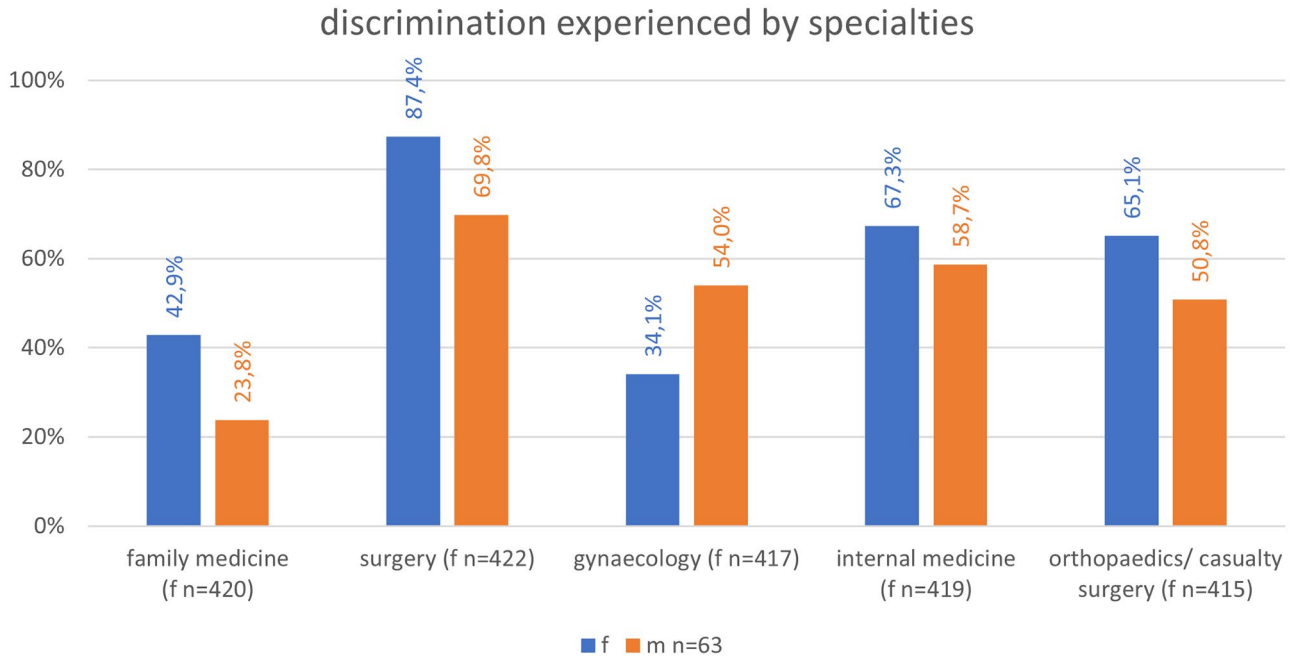

Fig. 1 The five most common specialties to experience gender discrimination itemised by gender

Table 2 Reported incidents of gender discrimination by male and female students. Specified by setting, form and aggressors' gender

Setting of discrimination (experienced and witnessed)	***n* = 560 (multiple answers possible)**			
University lectures and classes	434 (77.5%)			
Nursing practice internship	465 (83.0%)			
Clinical traineeship	464 (82.9%)			
Internships	383 (68.4%)			
Work at a hospital ward	257 (45.9%)			
Junior residency (*n* = 178)	139 (78.1%)			
Forms of discrimination	***Female* = 438**	***Male* = 65**	***Witnessed* = 78**	***p-value***
degrading jokes/insults	409 (93.4%)	45 (69.2%)	61 (78.2%)	< 0.0001
degrading gestures concerning the gender	251 (57.3%)	25 (38.5%)	28 (35.9%)	= 0.0044
degrading nicknames	389 (89.0%)	49 (75.4%)	56 (71.8%)	= 0.0021
unfounded questioning of one's knowledge	347 (79.2%)	38 (58.5%)	50 (64.1%)	= 0.0002
insults, verbal abuse	138 (31.5%)	23 (35.4%)	13 (16.7%)	n.s.
threats, harassment	161 (36.8%)	18 (27.7%)	14 (17.4%)	n.s.
unwanted touch	266 (60.7%)	28 (43.1%)	24 (30.8%)	= 0.007
favouring fellow students of the other gender	325 (74.2%)	48 (73.9%)	35 (44.9%)	n.s.
public humiliation	174 (39.7%)	27 (41.5%)	25 (32.1%)	n.s.
social exclusion	120 (27.5%)	16 (24.6%)	7 (9.0%)	n.s.
unwanted showing of pornographic material	18 (4.1%)	4 (6.2%)	1 (1.3%)	n.s.
unwanted persistent affections	142 (32.5%)	14 (21.5%)	15 (19.2%)	n.s.
unwanted inappropriate compliments	329 (75.3%)	33 (50.8%)	33 (42.3%)	< 0.0001
subliminal sexual extortion	17 (3.9%)	4 (6.2%)	1 (1.3%)	n.s.
sexual harassment / assault	26 (5.7%)	4 (6.2%)	0 (0%)	n.s.
Aggressors	***F* = 419/420**	***M* = 62**		
Same gender as discriminated	245 (58.3%) *n* = 419	51 (82.3%)		= 0.0003
Other gender than discriminated	413 (98.6%) *n* = 420	56 (90.3%)		= 0.0001
Aggressors advising to/against a specialty	***F* = 469**	***M* = 130**	***F* = 469**	***M* = 130**
	Advising to	*Advising to*	*Advising against*	*Advising against*
Fellow students	49 (10.5%)	4 (3.1%)	82 (17.5%)	9 (6.9%)
Lecturers	82 (17.5%)	2 (1.5%)	84 (17.9%)	5 (3.9%)
Junior physicians	110 (23.5%)	12 (9.2%)	136 (29.0%)	7 (5.4%)
Senior physicians	142 (30.3%)	9 (6.9%)	150 (32.0%)	3 (2.3%)
Chief physicians	61 (13.0%)	3 (2.3%)	68 (14.5%)	2 (1.5%)
Family members	91 (19.4%)	3 (2.3%)	83 (17.7%)	7 (5.4%)
Medical technical assistants	17 (3.6%)	0 (0%)	16 (3.4%)	2 (1.5%)
Nurses	35 (7.5%)	5 (3.9%)	55 (11.7%)	6 (4.6%)
other	42 (8.9%)	2 (1.5%)	41 (8.7%)	8 (6.2%)
Regarding the own Gender as		***F n* = 472**	***M n* = 132**	***p-value***
	a disadvantage	387 (82%)	64 (48.5%)	< 0.0001
	an advantage	336 (71.2%)	90 (68.2%)	n.s.
Changes in the specialty-choice		***F n* = 472**	***M n* = 131**	
Not considered a speicatly in the first place	Due to gender discrimination	50 (10.6%)	3 (2.3%)	
	Other reasons	312 (66.1%)	91 (69.5%)	
redecided on the specialty choice	Ever	152 (32.2%)	44 (33.3%) *n* = 132	
	Multiple times	194 (41.1%)	51 (38.6%) *n* = 132	

In addition, participants were asked how often they experienced gender discrimination by aggressors of their own gender and/or of the other gender (Table 2). Men were significantly more often discriminated by their own gender compared to women (women discriminated by women: $n = 245$, 58.3% vs. men discriminated by men: $n = 51$, 82.3%, $p = 0.0003$). In contrast, women were significantly more often discriminated by the other gender (women discriminated by men: $n = 413$, 98.6% vs. men discriminated by women: $n = 56$, 90.32%, $p = 0.0001$).

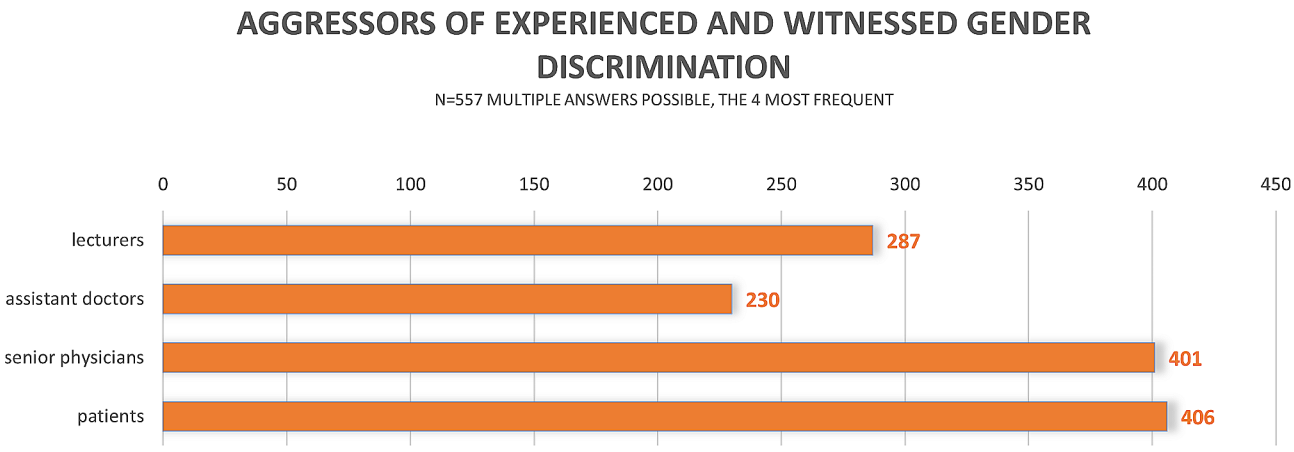

Fig. 2 Most frequently named aggressors of combined, sum of experienced and witnessed gender discrimination incidents

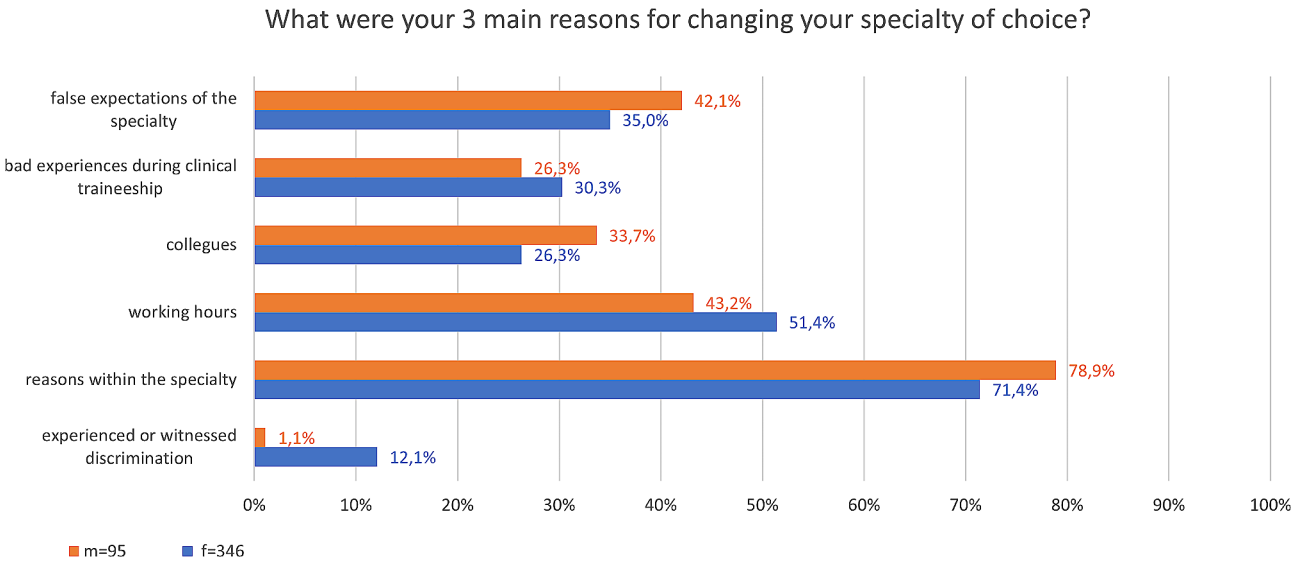

Fig. 3 Percentages of participants selecting a reason as one of their 3 main reasons for their change of specialty

Furthermore, participants were asked whether they have ever perceived their gender as an advantage or disadvantage during their study of medicine (Table 2). There was no significant difference between the perception of their gender as an advantage between male and female students (f=336, 71.2% vs. m=90, 68.2%, n.s.). In contrast, the female students stated significantly more often, that they frequently assessed their gender as a disadvantage, than men (f=387, 82% vs. m=64, 48.5%, $p<0.0001$).

Changes in the desired specialty

The medical students were also asked, whether they have ever changed their specialty choice during their medical education. Among the female students, $n=346$ (73.3%) reported to have changed their specialty choice, $n=194$ (41.1%) of them even multiple times. Male students had similar percentages with $n=95$ (72%) ever changing their specialty choice and $n=51$ (38.6%) reconsidering multiple times. (Table 2).

Gender discrimination was the reason for $n=50$ (10.6%) women and $n=3$ (2.3%) men to not consider a specialty as a career option in the first place (Table 2). The main reason for changing the initially desired speciality were working hours (f: 51.4%, m: 43.2%) and false expectations of the specialty (f: 35%, m: 42.1%) (Fig. 3). The only statistically significant difference between men and women in terms of changing the speciality was gender discrimination. Women chose gender discrimination to be among their three main reasons for a chance of a previously chosen specialty significantly more often than men (f=42, 12.1% vs. m=1, 1.1%, $p=0.0013$) (Fig. 3). Altogether, $n=6$ (1.7%) of the women reported that gender discrimination was the only reason for changing the desired speciality. None of the men in the study reported that gender

discrimination was the only reason for changing their speciality choice.

$N=268$ (57.1%) women received advise to choose a certain specialty only because of their gender compared to $n=21$ male students (16.2%, $p<0.0001$)(Fig. 4.1). Even more women were told not to pursue a career in a certain specialty because of their gender ($n=330$, 70.4%, Fig. 4.3). Male students did also experience more advice against certain specialties, that toward others (against: $n=27$, 20.8% vs. towards: $n=21$, 16.2%). Men reported significantly more often (m=9, 6.9% vs. f=1, 0.2%, $p<0.0001$) to have been advised to choose the specialty of surgery, because of their gender and not to start their career in the specialties of gynaecology (m=20, 15.4% vs. f=10, 2.1%, $p<0.0001$) or paediatrics (m: $n=7$, 5.4% vs. w: $n=7$, 1.5%, $p=0.0093$) (Fig. 4.2 and 4.4), while women were told to avoid surgery (f=283, 60.3% vs. m=3, 2.3%, $p<0.0001$) and orthopaedics (f=175, 37.3% vs. m=0, 0%, $p<0.0001$) (Fig. 4.2+4.4) (Fig. 4).

Discussion

Our Germany wide survey showed that gender discrimination is a present part for medical students during their training. In comparison to a single centred study in Germany in 2020 [10], the participants at our study reported experienced or witnessed gender discrimination more frequently. The reasons for that are diverse. First, the presence of gender discrimination in all forms of media has even increased in the past 3 Years. Second, our study population was approximately two times larger and we only included 5th and 6th year students in our study population. Especially the ladder point might be of significance because students who are more advanced in their medical education might naturally have had more situations were a discrimination incident could occur.

The aggressors of gender discrimination were people that have a high standing in hospital's hierarchy and/or the students have much contact to. That might explain that senior doctors and patients were the most frequently named aggressors. While students depend for a proper education and fair grading to a certain degree on senior doctors [14], patients as aggressors might reflect that

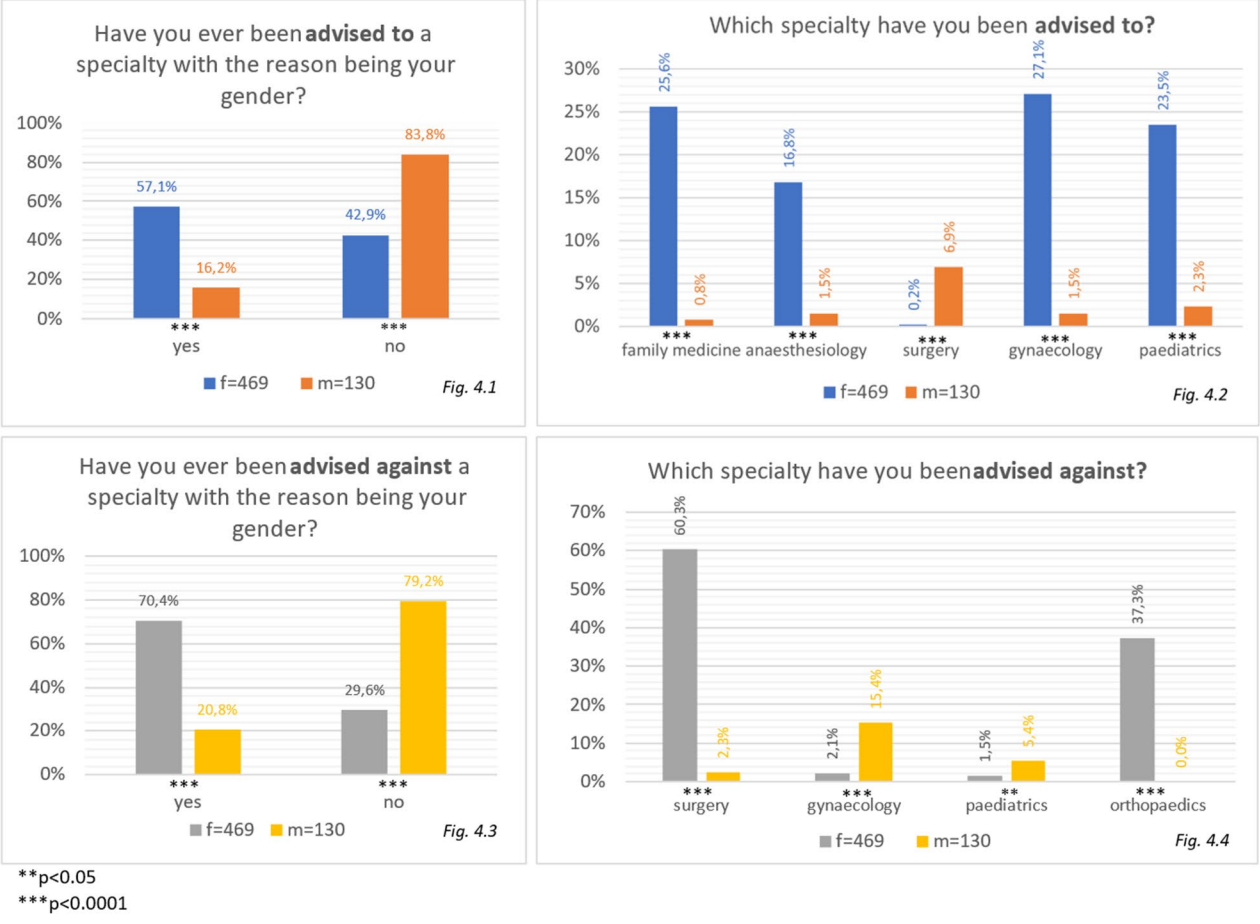

Fig. 4 Percentages of participants that have ever been advised to or against a certain specialty, analysed by gender

gender discrimination is not only a problem of medical education, but of society, as well. Similar aggressor distribution was found in a Swedish study amongst final year medical students [12].

Male students showed to have significantly higher career intentions, either reaching for higher positions [10] or declaring good career options to be an important factor for the future specialty, which was confirmed in another study [16]. Interestingly a good work-life-balance was most often considered to be important for both men and women, what might seem counterintuitive. This leads to the question whether men and women define a good work-life-balance equally, or whether the goal of a good work-life-balance has become less of a gender-based goal, but more of a demand of this generation.

The gender of students that have witnessed gender discrimination more frequent were surprisingly men. Reasons could include the tendency of women to downplay occurred gender discrimination incidents, when confronted repeatedly with a hostile environment [14, 18]. This hypothesis is plausible especially in terms of the high quantities of gender discrimination during medical education [10, 12, 15, 18, 19] and that makes it quite unlikely for medical students to have never ever witnessed gender discrimination. By giving a definition of our understanding of gender discrimination and microaggressions, we tried to minimise the influence of different perceptions of discrimination on the reported incidents. However, a definition might not exclude that influence in total, meaning the subjective perception of gender discrimination remains an important bias factor that has to be considered when interpreting our results.

While gender discrimination is not one of the most frequently reported reasons, it still influenced the specialty choice of in particular for women. These findings are contrary to a similar study with medical students in the USA, that observed men to be more perceptible of experienced gender discrimination [9]. In both studies the influence of gender discrimination on the students' specialty choice was determined by self-assessment by the participants and is therefore a subjective evaluation. Furthermore, the participants in our study were given multiple examples for reasons that might have affected their choice against one specialty, instead of just asking about the influence of the gender discrimination on their decision. The participants of a Swedish single centre study reported, that an important coping mechanisms of gender discrimination was the avoidance of unpleasant situations, people and places [14]. This might imply avoiding a certain speciality due to experiences gender discrimination.

The questionnaire also included advises the students were given concerning their future specialty, that might have an influence on their specialty choice, as well. Interestingly, female participants were more likely to be advised to a speciality where they also saw their career future, such as gynaecology, paediatrics, anaesthesiology or family medicine. Male medical students did not prefer to be surgeons as often as they were advised to. However, the advised avoidance of paediatrics and gynaecology, was similar to the preferred speciality as they were less popular among male students.

With the advice towards female students to not choose surgery or orthopaedics as a career option, the advisors named two of the specialties where most incidents of gender discrimination were reported. These findings propose a connection even though only 12.9% of students stated, that gender discrimination influenced their decision on their future speciality. Women's predominance in obstetrics-gynaecology or paediatrics can be found across countries in various studies [6, 7, 20].

Are they still stereotypical relicts? In the case of orthopaedic surgery, women found the specialty to be unappealing because of the work/life balance and also perceived themselves as physically too weak [21]. Although there might be no objective reason for not choosing a certain physically demanding medical speciality, subjective reasons might play an important role.

In the study of Gjerberg et al. [22] the lack of flexibility in the work environment in the men dominated specialty of general surgery was observed as a further reason for not completing their training. She points out, that even though gynaecology and general surgery have similar demands on the doctors, the number of female doctors between these specialities differ a lot. This suggests that the specialties that are more attractive for women may have already found ways to be more attractive, for example by more flexible work schedules to, for example raise children.

Women have structural disadvantages when it comes to very time and capacity demanding medical specialties, because they are expected to care for their family, house and children on top of their work [4, 23]. In Germany for example, partners with unequal incomes have tax advantages.- Structurally intended the work distribution becomes unbalanced, even leading to women at work having to step back or risking burn-outs [23]. With this in mind, female medical students might choose their specialty according to their upcoming tasks in the family life.

The strong association between female medical students' decision for a specialty and the amount of women as role models in that specialty was found by Neumayer et al. [8] indicating that the lack of role models in certain specialties, presumably for men and women, might be an important influencing factor for the students' specialty choice, as well [21].

In contrast to the reasons for a change of the desired specialty in our analysis, other studies have identified multiple other reasons for medical students, that

reportedly influenced their decision. Mohamed et all [24] found, based on a questionnaire at a Saudi-Arabian college of medicine, that the selection of specialty were economic anticipations as well as personal interest. A Slovenian study compared less subjective determinants like social backgrounds and character traits among medical students with the same specialty of choice and found resemblances among these [25]. In addition to the results in our study, a single centre study in the United Arab Emirates [20] confirmed that the atmosphere, a medical student experiences while engaging with a specialty and, to a lesser degree, the recommendations received by friends and family do affect the medical students' decision about their specialty choice.

Limitations

More women than men participated in our study presumable due to bias of interest in the topic, meaning the results for women are more representable than for the men. Furthermore, the amount of replies from the different universities varied a lot. Even though all of the universities were reached by at least one way of contact, the distributions' efficiency towards students differed, so that not every German medical student matching our study population's criteria could be reached.

With the subject of discrimination, there is always a variation on peoples' perception of discrimination incidents and their severity. The answers to the questionnaire must be regarded as subjective descriptions. Nevertheless, it is important to acknowledge the subjective discomfort of students, as this subjective impression is, what influences decisions, such as career pathways.

Conclusion

Gender discrimination plays an important role in medical students' education and in choosing their striven specialty. With the increasing numbers of female doctors and the impending shortage of doctors in Germany, the unequal gender dispersion amongst the specialties, as it is now and as the participants' current specialty choices suggest, could increase the problematic situation even further. Specialties should therefore aim to be equally attractive to both, men and women or at least to not repel genders. Other than gender discrimination it is important to establish a social structure that allows all people to combine work, family and free time in a non-overwhelming manner, so that all doctors that were thoroughly trained can work and stay healthy for a long time.

Furthermore, it should be in our societies greatest interest to train well educated doctors that choose their specialty based on their interest and talents and not because of a social role picture that was forced upon them. As in former times all medical specialities were dominated by men, it can be expected, that female doctors will also conquer currently male dominated fields.

Gender discrimination is a problem in many aspects of society and is fought by various measures. The medical faculties, as a place of education and therefore with impact on the future doctors, must support their students in addressing gender discrimination incidents. There are already Equality-Offices at most German universities, that offer assistance dealing with discrimination. Students should have low-threshold access to reporting systems for gender discrimination as well as fast help when needed.

Due to the raising awareness about gender stereotypes and discrimination, that might have been less imminent in the past, it is important as well to address the potential aggressors of such discrimination to raise their awareness on the topic, create a great understanding of it and prevent incidents from occurring.

Supplementary Information

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Supplementary Material 1

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Author contributions
J.S. and A.K. conceptualised the study and agreed on its' methods. J.S. and A.K. designed the questionnaire. J.S. distributed the questionnaire, collected, analysed and visualised the data. J.S. wrote the original Paper, J.S. and A.K. reviewed and edited the Paper. A.K. supervised the study. All authors have read and approved the final manuscript.

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Declarations

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Supplementary Material:

soSci
oFb - der onlineFragebogen

facharztwahlPJ → base 07.03.2023, 16:02

Seite 01

B0

Hallo!
Schön, dass du an der Umfrage teilnimmst.

Im Rahmen meiner Doktorarbeit möchte ich ermitteln, welche Faktoren für Medizinstudierende bei der Auswahl des PJ-Faches und später des Facharztes eine Rolle spielen.

Die Teilnahme an der Umfrage ist natürlich freiwillig und für alle Medizinstudierenden an deutschen Universitäten ab dem 9. Semester freigeschaltet. Ich würde mich sehr freuen, wenn du den Fragebogen im Anschluss mit deinem Freundeskreis und Kommiliton*Innen teilen würdest.

Ganz liebe Grüße aus Aachen,
Jule

Seite 02

E0

1. Studierst du an einer Universität in Deutschland Medizin?

- ◯ Ja
- ◯ Nein

2 aktive(r) Filter

Filter E001/F1
Wenn eine der folgenden Antwortoption(en) ausgewählt wurde: **2**
Dann nach dem Klick auf "Weiter" den Text **Z002** anzeigen und das Interview beenden

Filter E001/F2
Wenn eine der folgenden Antwortoption(en) ausgewählt wurde: **1**
Dann Frage/Text **E002** später im Fragebogen anzeigen (sonst ausblenden)

2. In welchem Semester deines Studiums befindest du dich?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6
- ◯ 7
- ◯ 8
- ◯ 9
- ◯ 10
- ◯ PJ

3 aktive(r) Filter

Filter E002/F1
Wenn eine der folgenden Antwortoption(en) ausgewählt wurde: **1, 2, 3, 4, 5, 6, 7, 8**
Dann nach dem Klick auf "Weiter" den Text **Z002** anzeigen und das Interview beenden

Filter E002/F2
Wenn eine der folgenden Antwortoption(en) ausgewählt wurde: **11**
Dann in Frage **D003** die Items **6** anzeigen (sonst ausblenden)

Filter E002/F3
Wenn eine der folgenden Antwortoption(en) ausgewählt wurde: **11**
Dann in Frage **D102** die Items **6** anzeigen (sonst ausblenden)

3. An welcher Universität studierst du?

[Bitte auswählen]

4. In welchem Abschnitt deines Studiums befindest du dich?

- ◯ 9. Semester
- ◯ 10. Semester
- ◯ vor 2. Staatsexamen
- ◯ nach 2. Staatsexamen
- ◯ PJ

5. Welchem Geschlecht ordnest du dich am ehesten zu?

- ◯ weiblich
- ◯ männlich
- ◯ divers

6. Wie alt bist du?

dein Alter in Jahren

7. Bist du religiös? Wenn ja, welcher Religionsgemeinschaft gehörst du an?

- ◯ Ja
- ◯ Nein

8. Was ist der höchste Bildungsabschluss deiner Eltern, bezogen auf das Elternteil mit dem höchsten Abschluss?

- ◯ Hochschulabschluss
- ◯ Fachhochschulabschluss
- ◯ Ausbildungsabschluss
- ◯ Meister*In
- ◯ Kein Abschluss
- ◯ Sonstiger
  Welcher Abschluss?

9. Welche Facharztweiterbildung / welches PJ-Wahlfach erwägst du im Moment am ehesten?

- ◯ Allgemeinmedizin
- ◯ Anästhesiologie
- ◯ Augenheilkunde
- ◯ Chirurgie
- ◯ Frauenheilkunde und Geburtshilfe
- ◯ Hals-, Nasen-, Ohrenheilkunde
- ◯ Haut- und Geschlechtskrankheiten
- ◯ Innere Medizin
- ◯ Kinder- und Jugendmedizin
- ◯ Neurologie
- ◯ Psychosomatische Medizin und Psychotherapie
- ◯ Psychiatrie und Psychotherapie
- ◯ Radiologie
- ◯ Orthopädie und Unfallchirurgie
- ◯ Urologie
- ◯ Sonstige

10. Wie wichtig sind dir die Folgenden Punkte bei der Wahl für ein Fachgebiet?

geregelte Arbeitszeiten

unwichtig	weniger wichtig	wichtig	sehr wichtig

flexible Arbeitszeiten (z.B. Teilzeit)

unwichtig	weniger wichtig	wichtig	sehr wichtig

guter Verdienst

unwichtig	weniger wichtig	wichtig	sehr wichtig

gute Karrieremöglichkeiten

unwichtig	weniger wichtig	wichtig	sehr wichtig

Vereinbarkeit von Familie und Beruf

unwichtig	weniger wichtig	wichtig	sehr wichtig

neben der Krankengeschichte auch die Lebensverhältnisse der Patienten kennen

unwichtig	weniger wichtig	wichtig	sehr wichtig

ein breites Spektrum an Erkrankungen behandeln

unwichtig	weniger wichtig	wichtig	sehr wichtig

in einem Team mit Ärzten verschiedener Fachrichtungen arbeiten

unwichtig	weniger wichtig	wichtig	sehr wichtig

in einem Team mit Kollegen verschiedener Gesundheitsberufe arbeiten

unwichtig	weniger wichtig	wichtig	sehr wichtig

chirurgisch behandeln

unwichtig	weniger wichtig	wichtig	sehr wichtig

konservativ behandeln

unwichtig	weniger wichtig	wichtig	sehr wichtig

Niederlassungsmöglichkeit

unwichtig	weniger wichtig	wichtig	sehr wichtig

Geschlechtsbezogene Diskriminierung, also Diskriminierung, die auf dem Geschlecht des Opfers basiert, kann auf direkte und offensive Weise z.B. in Form von Beleidigungen oder Belästigung ausgeübt werden. Sie kann sich jedoch auch viel subtiler äußern, als sogenannte Mikroaggressionen.

„Mikroaggressionen sind alltägliche Kommentare [„ach ihr Männer/Frauen"], Fragen [„hast du dir denn Gedanken über die Familienplanung gemacht?"], verbale oder nonverbale Handlungen [Hand auflegen, tätscheln, auslachen], die überwiegend marginalisierte Gruppen treffen und negative Stereotypen verfestigen. Sie können sowohl absichtlich als auch unabsichtlich geäußert oder getätigt werden. Obwohl sie oft nicht verletzend gemeint sind, können sie dazu führen, dass sich Menschen unsicher und unwohl fühlen. Mikroaggressionen mögen im Moment klein oder unbedeutend erscheinen, aber sie summieren sich und können Menschen das Gefühl geben nicht dazuzugehören".[1]

Achtung: Im folgenden Abschnitt kommen Fragen zu Diskriminierungserfahrungen auf Grund des Geschlechts. Diese können eventuell auf Opfer von geschlechtsbezogener Diskriminierung retraumatisierend wirken.

1 (https://vielfalt.uni-koeln.de/antidiskriminierung/glossar-diskriminierung-rassismuskritik/mikroaggressionen)

11. Hast du im Rahmen deines Studiums jemals Diskriminierung aufgrund deines Geschlechts erlebt?

- ◯ sehr häufig
- ◯ häufig
- ◯ gelegentlich
- ◯ selten
- ◯ nie

1 aktive(r) Filter

Filter D002/F1
Wenn eine der folgenden Antwortoption(en) ausgewählt wurde: **5**
Dann nach dem Klick auf "Weiter" direkt zur Seite **D4** springen

12. In welchem Setting hast du diese Diskriminierungserfahrungen vor allem gemacht?
Wenn du dich nie in einem bestimmten Settings befunden hast kreuze bitte „trifft nicht zu“ an.

Universitäre Lehrveranstaltungen (Vorlesungen, Seminare, etc.)

nie	selten	gelegentlich	häufig	sehr häufig	*trifft auf mich nicht zu*

Krankenpflege Praktikum

nie	selten	gelegentlich	häufig	sehr häufig	*trifft auf mich nicht zu*

Famulaturen

nie	selten	gelegentlich	häufig	sehr häufig	*trifft auf mich nicht zu*

Praktika

nie	selten	gelegentlich	häufig	sehr häufig	*trifft auf mich nicht zu*

Arbeit auf Station (z.B. als HiWi)

nie	selten	gelegentlich	häufig	sehr häufig	*trifft auf mich nicht zu*

PJ

nie	selten	gelegentlich	häufig	sehr häufig	*trifft auf mich nicht zu*

13. Warst du jemals Zeuge von geschlechtsbezogener Diskriminierung?
(Reden über eine andere Person, Makro-/Mikroaggressionen gegenüber anderen Personen)

- ◯ sehr häufig
- ◯ häufig
- ◯ gelegentlich
- ◯ selten
- ◯ nie

14. Welche Form/en von Diskriminierung hast du selbst erlebt?

Degradierende Witze oder Bemerkungen in Bezug auf dein Geschlecht

nie	selten	gelegentlich	häufig	sehr häufig

Degradierende Gesten in Bezug auf dein Geschlecht

nie	selten	gelegentlich	häufig	sehr häufig

Degradierende Spitznamen (z.B. „Schätzchen“, „Mädchen“, „Süße/r“)

nie	selten	gelegentlich	häufig	sehr häufig

Unbegründetes in Frage stellen der Fachkenntnisse

nie	selten	gelegentlich	häufig	sehr häufig

Beleidigungen oder Beschimpfungen

nie	selten	gelegentlich	häufig	sehr häufig

Bedrohungen oder Belästigung

nie	selten	gelegentlich	häufig	sehr häufig

Ungewollte Berührungen (z.B. über den Rücken streichen, Hand auflegen)

nie	selten	gelegentlich	häufig	sehr häufig

Bevorzugen von Kommiliton*Innen des anderen Geschlechts

nie	selten	gelegentlich	häufig	sehr häufig

Öffentliche Demütigung (z.B. Bloßstellen in der Visite)

nie	selten	gelegentlich	häufig	sehr häufig

Sozialer Ausschluss (z.B. Ausschluss aus Gesprächen/ gemeinsamem Mittagessen)

nie	selten	gelegentlich	häufig	sehr häufig

Ungewolltes Zeigen von pornografischem Material

nie	selten	gelegentlich	häufig	sehr häufig

Ungewollte persistierende Zuneigungen und Avancen (z.B. Flirten, private Treffen)

nie	selten	gelegentlich	häufig	sehr häufig

Unerwünschte / unpassende Komplimente

nie	selten	gelegentlich	häufig	sehr häufig

Unterschwellige sexuelle Erpressung

nie	selten	gelegentlich	häufig	sehr häufig

Sexuelle An-/Übergriffe

nie	selten	gelegentlich	häufig	sehr häufig

15. In welchen Fachgebieten hast du bereits geschlechtsbezogene Diskriminierung erfahren?
(z.B. in PJ, Praktika, Vorlesungen oder Seminaren zu diesem Fach)

Allgemeinmedizin

nie	selten	gelegentlich	häufig	sehr häufig

Anästhesiologie

nie	selten	gelegentlich	häufig	sehr häufig

Augenheilkunde

nie	selten	gelegentlich	häufig	sehr häufig

Chirurgie

nie	selten	gelegentlich	häufig	sehr häufig

Gynäkologie und Geburtshilfe

nie	selten	gelegentlich	häufig	sehr häufig

Hals-, Nasen-, Ohrenheilkunde

nie	selten	gelegentlich	häufig	sehr häufig

Dermatologie

nie	selten	gelegentlich	häufig	sehr häufig

Innere Medizin

nie	selten	gelegentlich	häufig	sehr häufig

Pädiatrie

nie	selten	gelegentlich	häufig	sehr häufig

Neurologie

nie	selten	gelegentlich	häufig	sehr häufig

Psychiatrie und Psychotherapie

nie	selten	gelegentlich	häufig	sehr häufig

Radiologie

nie	selten	gelegentlich	häufig	sehr häufig

Orthopädie und Unfallchirurgie

nie	selten	gelegentlich	häufig	sehr häufig

Urologie

nie	selten	gelegentlich	häufig	sehr häufig

Sonstige

nie	selten	gelegentlich	häufig	sehr häufig

16. Welche Funktionen hatten die Aggressoren?

Mehrfachauswahl möglich

- ☐ Kommiliton*Innen
- ☐ Dozierende
- ☐ Assistenzärzt*Innen
- ☐ Oberärzt*Innen
- ☐ Chefärzt*Innen
- ☐ Pflegekräfte
- ☐ OP-Personal
- ☐ MFAs oder MTAs (Medizinische Fachangestellte/ Medizinisch-technische Angestellte)
- ☐ Patient*Innen
- ☐ Sonstige

17. Wie häufig hast du geschlechtsbezogene Diskriminierung erlebt, bei der der/die Aggressor*In das gleiche Geschlecht hatte wie du?

gleiches Geschlecht wie du

- ○ sehr häufig
- ○ häufig
- ○ gelegentlich
- ○ selten
- ○ nie

18. Wie häufig hast du geschlechtsbezogene Diskriminierung erlebt, bei der der/die Aggressor*In ein anderes Geschlecht hatte als du?

anderes Geschlecht als du

- ○ sehr häufig
- ○ häufig
- ○ gelegentlich
- ○ selten
- ○ nie

1 aktive(r) Filter

Filter D008/F1
Wenn eine der folgenden Antwortoption(en) ausgewählt wurde: **1, 2, 3, 4, 5**
Dann nach dem Klick auf "Weiter" direkt zur Seite **W0** springen

Seite 08
D4

19. Warst du jemals Zeuge von geschlechtsbezogener Diskriminierung?
(Reden über eine andere Person, Makro-/Mikroaggressionen gegenüber anderen Personen)

- ◯ sehr häufig
- ◯ häufig
- ◯ gelegentlich
- ◯ selten
- ◯ nie

1 aktive(r) Filter
Filter D101/F1
Wenn eine der folgenden Antwortoption(en) ausgewählt wurde: **5**
Dann nach dem Klick auf "Weiter" direkt zur Seite **W0** springen

Seite 09
D5

20. In welchem Setting hast du diese Diskriminierung vor allem beobachtet?
wenn du dich nie in einem bestimmten Setting befunden hast, kreuze bitte „trifft nicht zu“ an

Universitäre Lehrveranstaltungen (Vorlesungen, Seminare, etc.)

nie	selten	gelegentlich	häufig	sehr häufig	*trifft auf mich nicht zu*

Krankenpflegepraktikum

nie	selten	gelegentlich	häufig	sehr häufig	*trifft auf mich nicht zu*

Famulaturen

nie	selten	gelegentlich	häufig	sehr häufig	*trifft auf mich nicht zu*

Praktika

nie	selten	gelegentlich	häufig	sehr häufig	*trifft auf mich nicht zu*

Arbeit auf Station (z.B. als HiWi)

nie	selten	gelegentlich	häufig	sehr häufig	*trifft auf mich nicht zu*

PJ

nie	selten	gelegentlich	häufig	sehr häufig	*trifft auf mich nicht zu*

21. In welcher Form äußerte sich die von dir beobachtete geschlechtsbezogene Diskriminierung?

Degradierende Witze oder Bemerkungen in Bezug auf das Geschlecht

nie	selten	gelegentlich	häufig	sehr häufig

Degradierende Gesten in Bezug auf das Geschlecht

nie	selten	gelegentlich	häufig	sehr häufig

Degradierende Spitznamen (z.B. „Schätzchen“, „Mädchen“, „Süße/r“)

nie	selten	gelegentlich	häufig	sehr häufig

Unbegründetes in Frage stellen der Fachkenntnisse

nie	selten	gelegentlich	häufig	sehr häufig

Beleidigungen oder Beschimpfungen

nie	selten	gelegentlich	häufig	sehr häufig

Bedrohungen oder Belästigung

nie	selten	gelegentlich	häufig	sehr häufig

Ungewollte Berührungen (z.B. über den Rücken streichen, Hand auflegen)

nie	selten	gelegentlich	häufig	sehr häufig

Bevorzugen von Kommiliton*Innen des anderen Geschlechts

nie	selten	gelegentlich	häufig	sehr häufig

Öffentliche Demütigung (z.B. Bloßstellen in der Visite)

nie	selten	gelegentlich	häufig	sehr häufig

Sozialer Ausschluss (z.B. Ausschluss aus Gesprächen/ gemeinsamem Mittagessen)

nie	selten	gelegentlich	häufig	sehr häufig

Ungewolltes Zeigen von pornografischem Material

nie	selten	gelegentlich	häufig	sehr häufig

Ungewollte persistierende Zuneigungen und Avancen (z.B. Flirten, private Treffen)

nie	selten	gelegentlich	häufig	sehr häufig

Unerwünschte / unpassende Komplimente

nie	selten	gelegentlich	häufig	sehr häufig

Unterschwellige sexuelle Erpressung

nie	selten	gelegentlich	häufig	sehr häufig

Sexuelle An-/Übergriffe

nie	selten	gelegentlich	häufig	sehr häufig

22. In welchen Fachgebieten hast du bereits Diskriminierung bezeugt?

(z.B. in PJ, Praktika, Vorlesungen oder Seminaren zu diesem Fach)

Allgemeinmedizin

nie | selten | gelegentlich | häufig | sehr häufig

Anästhesiologie

nie | selten | gelegentlich | häufig | sehr häufig

Augenheilkunde

nie | selten | gelegentlich | häufig | sehr häufig

Chirurgie

nie | selten | gelegentlich | häufig | sehr häufig

Gynäkologie und Geburtshilfe

nie | selten | gelegentlich | häufig | sehr häufig

Hals-, Nasen-, Ohrenheilkunde

nie | selten | gelegentlich | häufig | sehr häufig

Dermatologie

nie | selten | gelegentlich | häufig | sehr häufig

Innere Medizin

nie | selten | gelegentlich | häufig | sehr häufig

Pädiatrie

nie | selten | gelegentlich | häufig | sehr häufig

Neurologie

nie | selten | gelegentlich | häufig | sehr häufig

Psychiatrie und Psychotherapie

nie | selten | gelegentlich | häufig | sehr häufig

Radiologie

nie | selten | gelegentlich | häufig | sehr häufig

Orthopädie und Unfallchirurgie

nie | selten | gelegentlich | häufig | sehr häufig

Urologie

nie | selten | gelegentlich | häufig | sehr häufig

Sonstige

nie | selten | gelegentlich | häufig | sehr häufig

23. Welche Funktionen hatten die Aggressor*Innen?

(Mehrfachauswahl möglich)

- ☐ Kommiliton*Innen
- ☐ Dozierende
- ☐ Assistenzärzt*Innen
- ☐ Oberärzt*Innen
- ☐ Chefärzt*Innen
- ☐ Pflegekräfte
- ☐ OP-Personal
- ☐ MFAs oder MTAs (Medizinische Fachangestellte/ Medizinisch-technische Angestellte)
- ☐ Patient*Innen
- ☐ Sonstige:

24. Wie häufig hast du geschlechtsbezogene Diskriminierung bezeugt, bei der der/die Aggressor*In das gleiche Geschlecht hatte wie der/die Diskriminierte?

- ○ sehr häufig
- ○ häufig
- ○ gelegentlich
- ○ selten
- ○ nie

25. Wie häufig hast du geschlechtsbezogene Diskriminierung bezeugt, bei der der/die Aggressor*In ein anderes Geschlecht hatte als der/die Diskriminierte?

- ○ sehr häufig
- ○ häufig
- ○ gelegentlich
- ○ selten
- ○ nie

26. Wie oft hattest du im Verlauf deines Studiums das Gefühl, dass du dich deutlich mehr anstrengen musst, als Kommiliton*Innen des anderen Geschlechts?

- ◯ sehr häufig
- ◯ häufig
- ◯ gelegentlich
- ◯ selten
- ◯ nie

27. Wie oft hast du im Verlauf deines Medizinstudiums (Lehre, Famulaturen, Praktika, etc.) das Gefühl gehabt, dass dein Geschlecht von Vorteil für dich war?

- ◯ sehr häufig
- ◯ häufig
- ◯ gelegentlich
- ◯ selten
- ◯ nie

28. Wie oft hast du im Verlauf deines Medizinstudiums (Lehre, Famulaturen, Praktika, etc.) das Gefühl gehabt, dass dein Geschlecht von Nachteil für dich war?

- ◯ sehr häufig
- ◯ häufig
- ◯ gelegentlich
- ◯ selten
- ◯ nie

Seite 12

U1

29. Hast du bei der Entscheidung über dein PJ-Wahlfach / Facharzt bereits von vornherein von einer bestimmten Fachrichtung abgesehen?

- ◯ Ja
- ◯ Nein

30. Hast du dich im Verlauf deines Studiums bezüglich deines PJ-Wahlfachs/ Facharztwunsches schon mal umentschieden?

- ◯ Ja
- ◯ Ja, mehrmals
- ◯ Nein

2 aktive(r) Filter

Filter U002/F1
Wenn eine der folgenden Antwortoption(en) ausgewählt wurde: **1, 2**
Dann Frage/Text **U003** später im Fragebogen anzeigen (sonst ausblenden)

Filter U002/F2
Wenn eine der folgenden Antwortoption(en) ausgewählt wurde: **3**
Dann nach dem Klick auf "Weiter" direkt zur Seite **R** springen

Seite 13

U0

31. Waren geschlechtsbezogene Diskriminierungserfahrungen, z.B. durch Abwertung oder sexuelle Belästigung der Grund für deinen Wechsel?

- ◯ Ja
- ◯ unter Anderem
- ◯ Nein

32. Welches sind / waren deine Hauptgründe für den Wechsel deines PJ-Wahlfachs / Facharztwunsches?

bitte gib bis zu 3 Hauptgründe an

- ☐ Erlebte / beobachtete geschlechtsbezogene Diskriminierung
- ☐ Fachliche Gründe
- ☐ Arbeitszeiten
- ☐ Kollegium
- ☐ Schlechte Erfahrungen während Famulaturen
- ☐ Schlechte Erfahrungen im PJ
- ☐ Falsche Vorstellungen vom Fach
- ☐ Persönliche / familiäre Gründe
- ☐ sonstige

33. Wurde dir schon einmal auf Grund deines Geschlechts zu einem bestimmten Fach geraten? Wenn ja, zu welchem Fach und von wem?

Mehrfachauswahl möglich

- ☐ Ja
- ☐ Nein

34. Wurde dir schon einmal auf Grund deines Geschlechts geraten ein bestimmtes Fach nicht zu wählen? Wenn ja, von welchem Fach wurde dir abgeraten und von wem?

Mehrfachauswahl möglich

- ☐ Ja
- ☐ Nein

Letzte Seite

Vielen lieben Dank für deine Teilnahme an der Umfrage! Du hast mir damit sehr geholfen. Ich würde mich sehr freuen, wenn du die Umfrage mit deinem Freundeskreis und Kommiliton*Innen teilst. Ganz liebe Grüße aus Aachen, Jule

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Erklärung § 5 Abs. 1 zur Datenaufbewahrung

Hiermit erkläre ich, dass die dieser Dissertation zu Grunde liegenden Originaldaten

bei mir, Jule Stock, Robert-Havemann-Straße 5, 53121 Bonn

hinterlegt sind.

Erklärung gemäß § 5 Abs. (1) und (2), und § 11 Abs. (3) 12. der Promotionsordnung

Hiermit erkläre ich, **Jule Stock,** an Eides statt, dass ich den wesentlichen Anteil an der Publikation:
Stock J., Kaifie A.**:** The effects of gender discrimination on medical students‘ choice of specialty for their (junior) residency – a survey among medical students in Germany; BMC medical education.; 601 (2024). https://doi.org/10.1186/s12909-024-05579-9,
geleistet habe.
Die Anteile an der Arbeit waren wie folgt:

**Bitte Namen angeben ----------> **	J. Stock	A. Kaifie						Summe (%)
Studienüberwachung	90	10						100
Studiendesign/ Konzeption	75	25						100
Erstellung des Fragebogens	70	30						100
Fragebogen Distribution	100							100
Erhebung der Daten	100							100
Datenauswertung	100							100
Statistische Auswertung	100							100
Interpretation der Datenauswertung	90	10						100
Verfassung des Manuskripts	**100**							100
Korrektur des Manuskripts	50	50						100

Aus diesem wesentlichen Anteil ergibt sich selbstverständlich die Stellung als Erstautorin.