Perceptions of lecturers and students regarding discriminatory experiences and sexual harassment in Academic Medicine – Results from a faculty-wide quantitative study

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Research Article

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Abstract

Background

Discrimination and sexual harassment are prevalent in higher education institutions and can affect students, faculty members and employees. Herein the aim was to assess the extent of discriminatory experiences and sexual harassment of students and lecturers at one of the largest teaching hospitals in Europe. We analyze whether there are differences between lecturers and students, different study programs as well as sex/gender differences.

Methods

In an interdisciplinary, iterative process, a semi-standardized questionnaire was developed and sent to N = 7095 students (S) of all study programs and N = 2528 lecturers (L) at Charité - Universitätsmedizin Berlin, Germany. The study was conducted from November 2018 to February 2019. Besides a broad range of questions on sociodemographic background allowing for diversity sensitive data analysis, they were asked if they had witnessed and/or experienced any form of discrimination or sexual harassment at the medical faculty, if yes, how often, the perceived reasons, situational factors and perpetrators.

Results

The response rate was 14% (n = 964) for students and 11% (n = 275) for lecturers. A proportion of 49.6% of students (L: 31%) reported that they have witnessed and/or experienced discriminatory behavior. Sexual harassment was witnessed and/or experienced by 23.6% of students (L: 19.2%). Lecturers (85.9%) were identified as the main source of discriminatory behavior by students. Directors/supervisors (47.4%) were stated as the main source of discriminatory behavior by lecturers. As the most frequent perceived reason for discriminatory experiences sex/gender (S: 71%; L: 60.3%) was reported. Women and dental students experienced more discriminatory behavior and sexual harassment.

Conclusions

Discriminatory behavior is experienced by a significant number of students and lecturers, with power structures having a relevant impact. Dental students and women appear to be particularly exposed. Specific institutional measures, such as training programs for lecturers and students are necessary to raise awareness and provide resources. Furthermore, national preventive strategies should be thoroughly implemented to fight discrimination and harassment at the workplace.

Introduction

Discrimination due to e.g., gender, age, parenthood, sexual orientation or nationality and sexual harassment in the workplace and in higher education institutions are important global public health issues. They can affect employees, faculty members and students regardless of their age, gender or position and are also prevalent in academic medicine [1, 2, 3, 4, 5, 6, 7]. In the European Union, 40–50% of women have reported some form of sexual harassment at the workplace and a meta-analysis from the United States shows that out of 86,000 respondents, almost two thirds of women experience potentially harassing behaviors and around one fifth sexual harassment at work [7, 8].

Harassment and discrimination include a wide range of behaviors that are considered hostile, abusive, or humiliating by medical trainees and lecturers with deleterious effects on their well-being and education [1, 4]. They are often unnoticed types of violence that have an impact on the professional identity formation of students as well as on their specialty choices, on the capacity to work as a team, on the affected groups' or individual's capacity to reach full potential and thus on general work processes and the study environment [9, 10, 11]. This leads to a decline in productivity and to significant losses in scientific outcomes and can have a negative impact on the reputation of the organization and the future health workforce [3, 12, 13, 14].

Sexual harassment is a form of gender discrimination that affects women and men in all areas of work and is mostly attributable to hierarchical power relations [15]. According to the International Labour Organization, sexual harassment can occur in one or more of three forms: verbal, nonverbal, or physical [16]. It can range from verbal attacks to unwanted attention to physical attacks, it can include unwanted or unrequested sexualized behavior to being a victim of threatening or aggressive actions [17, 18, 19]. It can have a direct impact on health and can lead not only to depression, anxiety disorders, cardiovascular symptoms and burnout, but also chronic back pain, chronic gastrointestinal pain and headaches [20, 21, 22, 23, 24, 25, 26].

There are several national and international studies on discrimination and sexual harassment among health care professionals and in academic medicine looking at its impact on faculty members and medical students. Fnais et al. conducted a systematic review and meta-analysis about the risk factors, prevalence and sources of harassment and discrimination among medical trainees [4]. Broad et al. did a survey of a UK medical school

population and Bahji and Altomare a systematic review and meta-analysis focusing on resident physicians [1, 27]. Both studies showed that around two thirds of the respondents have experienced discrimination and harassment. Studies on medical education and harassment in academic medicine in Germany also show that sexual harassment and discrimination are prevalent among medical students [28, 29]. Further studies demonstrate the impact of discrimination and harassment of medical students on their health, e.g., resulting in symptoms of posttraumatic stress [30]. Besides medical students, lecturers also experience discrimination and sexual harassment having an impact on the number of publications, their career satisfaction and career advancement [31]. Jenner et al. conducted a study focusing on medical doctors, some also lecturers, at the Charité Medical University Hospital, one of the biggest hospitals in Europe and found that 70% experienced some form of misconduct at their workplace [32, 33]. Further studies from Taiwan and China also show a high prevalence of sexual harassment and discrimination in hospitals and among medical professionals with around 50% having experienced at least one form of workplace violence [34, 35].

To our knowledge, there is no study comparing discriminatory experiences of lecturers and students or examining the discriminatory experiences of dental students, a group that seems to be more impacted than other students in the health field. Therefore, employing a faculty-wide evaluation, we went one step further and included 1) all lecturers at Charité-Universitätsmedizin Berlin, i.e., researchers from all disciplines and faculties including basic sciences, theoretical medical subjects as well as clinical disciplines and 2) students of all study programs at Charité-Universitätsmedizin Berlin, i.e., medicine, dentistry (see Table 2) and 3) a focus on a broad range of discrimination experiences expanding upon sexual harassment.

Our aim was to analyze, evaluate and compare the extent of discriminatory behavior and sexual harassment at the faculty among students and lecturers. They were asked if they have experienced or observed discrimination at their faculty, how often they have experienced or witnessed it, from whom discriminatory behavior emanated, in which situations it occurred and what they consider as the reason for the discrimination. We also investigated if they have experienced sexual harassment, if yes, how often, what forms of sexual harassment they have experienced, the source of discrimination and the situation. In addition, they were asked to describe the situation in which discriminatory behavior or sexual harassment was experienced or witnessed. Furthermore, we wanted to analyze if there are differences in the experiences of discrimination and harassment between lecturers and students, women and men, students and lecturers with children and study programs. The results will help identify and develop preventive measures for students and lecturers to reduce discrimination and sexual harassment at the medical faculty.

Methods

The survey was conducted from 30.11.2018 to 25.02.2019 at Charité - Universitätsmedizin Berlin using an online questionnaire that was sent to N = 7095 students and N = 2528 lecturers. Inclusion criteria were being a student or a lecturer of any of the study programs at Charité. Students under the age of 18 were excluded. There was no possibility of answering the questionnaire twice. The study was approved by the data protection officers of the Charité Campus Mitte. Participants gave formal written consent to the use of their anonymized data for the study.

Questionnaire Development

In an interdisciplinary, iterative process, a semi-standardized questionnaire was developed together with internal and external experts on discriminatory issues, sexual harassment, gender and diversity as well as the Equal Opportunities Officers, faculty members from the quality assurance section of the Department for Teaching and Learning, medical students, and MediCoach (a psychosocial support service for students at Charité). Besides a broad range of questions on sociodemographic background allowing for diversity sensitive data analysis, the students and lecturers were asked about the quality of teaching and learning, resources, infrastructure, study environment, exams, study progress, workload, career and student support. Furthermore, they were asked if they had witnessed and/or experienced any form of discrimination at the faculty, if yes, how often, in which situations, the perceived reasons for discrimination, from whom the discriminatory behavior emanated and in which situations. We also wanted to know if they had witnessed and/or experienced sexual harassment, how often, from whom it emanated, in which situations and in which forms.

Questionnaire administration

An electronic version of the questionnaire was programmed in the evaluation system EvaSys (evasys GmbH, Lüneburg, Germany). A pretest was conducted in October 2018 and further modifications were made based on the feedback. The survey was advertised via the intranet, the student council initiative, social media and posters on campus.

The survey period was extended by five weeks in order to increase the response rate. Students and lecturers were reminded weekly to participate in the survey.

Statistics

Statistical data analysis was performed using SPSS® Statistics 25.0 (IBM, Böblingen, Germany). Descriptive statistical data analysis includes student and lecturers´ participation percentages and item scores. Significant differences were calculated using the Chi-square test according to Pearson. A p-value of $< .05$ was considered statistically significant.

Results

A total of 964 (14%) students and 275 (11%) lecturers responded to the survey. Table 1 shows the characteristics of the study participants. The sample of students as well as the sample of lecturers was representative of the student population as well as the population of lecturers based on sex/gender and age. The number of enrolled students per study program in relation to the response rate and percentage of lecturers per study program is shown in Table 2.

[Table 1 here]

[Table 2 here]

Discriminatory Behavior At The Faculty

Students

A proportion of 10.6% of the students indicated that discrimination at the faculty is frequent or very frequent, 70.4% of students reported that it occurs rarely or occasionally and 18.9% that it does not occur. There are differences between the study programs. In fact, 36.2% of dental students stated that discrimination occurs often or very often, 57.4% that it occurs rarely or occasionally and 6.4% that it do not occur.

A proportion of 9.7% of the students have experienced either discriminatory or undervaluing behavior themselves, 20.0% have observed it and 19.8% have both experienced and observed it. Around half (50.4%) of them have neither experienced nor witnessed it (Table 3). Of these, significantly more female students have experienced and observed discrimination ($p < 0.05$) and more students with children (24%; no children: 19%). However, the differences were not significant ($p = 0.236$). More dental students have experienced and/or observed it (35.5%) compared to other students (18.6%; $p = 0,003$).

Around one fifth of the students (19.2%) had experienced discriminatory behavior once, more than two thirds (68.4%) several times (< 10) and 12.5% have experienced them frequently (> 10) (Table 3). In terms of frequency, there are no significant differences between male and female students ($p = 0.102$) or students with and without children ($p = 0.726$).

Lecturers

A proportion of 13.6% of lecturers indicated that discrimination is frequent or very frequent, 65.6% stated that it occurs rarely or occasionally and 20.8% that it does not occur. A proportion of 11.5% of the lecturers have experienced discriminatory behavior, 8.7% have observed it and 10.7% have both experienced and observed discriminatory or disparaging behavior, 69.0% have not experienced it (Table 3). Significantly more female lecturers experienced and/or observed these than their male colleagues ($p = 0.011$). There were no significant differences between lecturers with or without children ($p = 0.236$). A proportion of 66.2% had experienced discrimination several times (< 10), 19.7% had experienced it frequently (> 10) and 14.1% had experienced it once (Table 3). There were no significant differences between female and male lecturers ($p = 0.810$). There were no significant differences due to age concerning the experience and/or observation or frequency ($p = 0.940; p = 0.068$) or between lecturers with or without children ($p = 0.068$).

[Table 3 here]

Discriminatory Experiences: Perceived Reasons, Persons And Situations

Students

Perceived reasons for discriminatory experiences

Sex/Gender (71%), performance and skills (47%) and nationality (36.3%) were most frequently cited as perceived reasons for discriminatory experiences. Language (24%), age (19.5%), socio-economic background (16.3%) and skin color (15.2%) were also mentioned. A proportion of 13.4% of students attributed discrimination to parenthood. Multiple answers were possible (Fig. 1). Compared to other students, dental students reported age (6.7%), political/ideological reasons (6.7%), sexual identity (4.4%), parenthood (2.2%) and skin color (8.9%) less frequently as perceived reasons for discriminatory experiences, but significantly more often performance and skills (71.1%) as well as language (28.9%).

[Figure 1 here]

Persons or groups of people from whom discriminatory behavior emanated

The persons or groups of people from whom discriminatory behavior emanated were lecturers (85.9%), fellow students (38.0%), patients (26.6%), executives and heads of everyday student life (18%), nursing staff (13.2%), administrative staff (11.2%) and supervisors of term papers and dissertations (8.4%) (Fig. 2). Multiple answers were possible. Female students mentioned colleagues, administrative staff and supervisors of term papers and dissertations more often than male students. The sex/gender differences were significant ($p = 0.013; p = 0.021; p = 0.01$). Participants also mentioned executives and heads of everyday student life and visitors more often, however the differences were not significant. Dental students

named lecturers (*91.1%; p < 0.001*), executives and heads in everyday student life (48.9%; *p < 0.001*) significantly more often as persons or groups of people from whom discriminatory behavior originated; other students (13.3%), patients (11.1%), nursing staff (4.4%), administrative staff (4.4%) and colleagues (2.2%) were named less frequently.

[Figure 2 here]

Situations

Discriminatory behavior was experienced especially in lectures and seminars (72.3%), followed by practical courses (48.1%), in work situations (28.6%), on campus (22.4%) and during exams (15.8%). There are differences between the study programs: Dental students stated that they have experienced discriminatory behavior, particularly during practical courses (59.5%), in work situations (48.6%) and during exams (43.2%). Lectures and seminars were only identified with a share of around one third (35.1%).

Lecturers

Perceived reasons for discriminatory experiences

Lecturers cited sex/gender as the most common reason for discriminatory experiences (60.3%) followed by performance and skills (38.5%) and age and nationality (28.2% each). Language (26.9%), skin color (20.5%), parenthood (17.9%), socio-economic background and sexual identity (15.4% each), political and ideological reasons (11.5%), health status (10.3%), religion (5.1%) and caring for relatives (1.3%) were also mentioned. Multiple answers were possible (Fig. 1). Of these, significantly more women (67%, men: 33%; *p = 0.014*) indicated sex/gender as a reason for discrimination and significantly more men indicated sexual identity (33%; women: 9%; *p = 0.035*). There were no significant sex/gender differences for the other categories.

Persons or groups of people from whom discriminatory behavior emanated

The persons or groups of people from whom discriminatory behavior emanated were directors/supervisors (47.4%), students (41.0%), colleagues (38.5%), patients (28.2%), nursing staff (21.8%), other lecturers (19.2%), administrative staff (19.2%), dissertation or habilitation supervisors (12.8%), visitors (12.8%) and service staff (2.6%). Multiple answers were possible (Fig. 2). Female lecturers named dissertation and habilitation supervisors and directors more often than male lecturers, however the differences were not significant.

Lecturers of dentistry more often named other lecturers and students, each with 55.6%, colleagues (44.4%) and service staff (11.1%). Directors/superiors at work (33%), patients (22.2%) and nursing staff (11.1%) were mentioned less.

Situations

Discriminatory behavior was experienced in work situations (66.7%), in lectures and seminars (35.9%), in practical courses (17.9%), on campus (canteen, library) (14.1%) and during exams (10.3%). Lecturers of dentistry more frequently reported lectures and seminars (55.6%), practical courses (44.4%) and discriminatory behavior on campus, but less work situations (33.3%).

Sexual Harassment

Students

A proportion of 4.8% of students stated that they have experienced some form of sexual harassment during their time at the Charité, e.g. through salacious remarks, unwelcome advances, explicit sexual acts, 7.5% stated that they have observed sexual harassment, 3.7% that they have both experienced and observed sexual harassment, 7.6% stated "don't know" and 76.4% stated that they have not experienced or observed any sexual harassment so far (Table 4).

Female students reported significantly more often that they have experienced or observed forms of sexual harassment ($p < .001$). There were no significant differences between students with or without children (*p = 0.876*) or dental students.

Frequency

Among the students who have witnessed and/or experienced sexual harassment, more than two thirds (63.6%) have witnessed and/or experienced it several times (< 10) (Table 4). Dental students indicated with a proportion of 20% that they have witnessed and/or experienced it once, 50% several times (< 10) and 30% often (> 10).

Lecturers

During their time at the Charité, 7.6% of lecturers of all areas have experienced a form of sexual harassment (lecturers of dentistry: 11.1%), 2.0% (dentistry: 0.0%) have observed them and 4.8% (dentistry: 5.6%) have experienced and observed them (Table 4). A share of 80.9% (dentistry: 77.8%) have not experienced and/or observed them. Significantly more female lecturers experienced and/or observed them (*p = 0.029*).

Frequency

Among the lecturers who have witnessed and/or experienced sexual harassment, 8.9% have witnessed and/or experienced it once, 68.9% several times (< 10) and 22.2% often (> 10) (Table 4).

[Table 4 here]

Sources Of Sexual Harassment

Students

Perpetrators of sexual harassment were mainly lecturers (60.4%), patients (37.8%) and fellow students (32.3%). Harassment by patients, fellow students, executives and heads of everyday student life, colleagues, nursing staff and visitors was more frequently cited by female students. However, the differences were not significant. Compared to the other students, even more dental students indicated lecturers (66.7%) and executives/heads of everyday student life (50%) as main source of sexual harassment.

Lecturers

Sources of sexual harassment

The persons from whom sexual harassment emanated were mainly colleagues (58.3%), directors/supervisors (41.7%) and patients (37.5%). Multiple answers were possible. There are no significant sex/gender differences (Fig. 2).

Students

The most frequent experiences of sexual harassment reported by students were that someone spoke derogatorily of women, men, homosexuals or other sexes (76.5%), or made lewd remarks about their appearance, clothing or sexual allusions or made derogatory remarks (58.1%) or someone made unwanted physical contact, through apparently accidental touching or unnecessary physical proximity (25.3%) (dental students: 75.0%; 25.0%; 33.3%). Experiences of having received derogatory or obscene jokes and sayings, pornographic or nude pictures by telephone, letter, e-mail, SMS or social media are reported by 5.1% (dental students 8.3%). The female students indicated this more often than the male students. There were significant sex/gender differences for some of the items, see Table 5.

Lecturers

As experiences of sexual harassment, the lecturers most frequently cited that someone spoke derogatorily of women, men, homosexuals or other sexes (8333%; dental faculty: 25%; $p = 0.010$), made lewd remarks about their appearance, clothing or sexual allusions or derogatory remarks (58.3%; dentistry: 50%), that they experienced unwanted physical contact, through apparently accidental touching or unnecessary physical proximity (35.4%; dentistry: 50%) or that someone whistled at them unwantedly, stared immorally or gotten undressed with a glance (35.4%; dentistry: 0%). There were no significant sex/gender differences (Table 5).

Comparison of students and lecturers

There exists a great extent of discrimination and sexual harassment at the faculty in regard to both lecturers and students. More students than lecturers report that they have experienced or observed discriminatory behavior, however more lecturers have experienced and/or witnessed some form of sexual harassment during their time at the Charité, e.g. through salacious remarks, unwelcome advances, explicit sexual acts. As perceived reasons for discriminatory experiences, both students and lecturers indicate that sex/gender is the main reason followed by performance and skills and nationality. The students indicate that sexual harassment mainly emanated from lecturers, followed by patients and fellow students, the lecturers report that sexual harassment emanated mainly from colleagues, directors/bosses and patients.

The students have experienced discriminatory behavior mainly in lectures, seminars and in practical courses, but less in work situations. Around two thirds of the lecturers have experienced discriminatory behavior mainly in work situations and around one third in lectures and seminars.

There seems to be more dental students confronted with discrimination and sexual harassment and the reason might be the more traditional course structures. Female students and faculty experience more discrimination and sexual harassment.

Discussion

Our results have shown that there is a great extent of discrimination and sexual harassment at the faculty in regard to both lecturers and students. A meta-analysis of 51 studies on the prevalence, risk factors, and sources of harassment and discrimination among medical trainees by Fnais et al. showed that around two-third of medical trainees had experienced at least one form of harassment or discrimination during their training [4]. The results of studies at two medical universities in Germany show similar results [28, 29] as well as the systematic review and meta-analysis by Bahji et

al. [27]. Karim and Duchcherer reviewed 10 articles [36]. They found that 45–93% of medical residents reported intimidation and harassment in at least one occasion. Verbal abuse was mentioned as the most predominant form of abuse.

In a study by Crutcher et al. 44.7% of family medicine graduates had experienced intimidation, harassment and/or discrimination (IHD) during residency [37]. A proportion of 94.3% cited inappropriate verbal comments and work as punishment (27.6%) as the type of IHD.

Broad et al. conducted a survey of a UK medical school population in 2014. Harassment and discrimination are prevalent in this sample. Most participants had experienced

or witnessed at least one type of discrimination or harassment and associated it with gender, ethnicity, sexuality, disability and year group [1]. In our study, the main perceived reasons for discrimination cited by the students were sex/gender, performance and skills and nationality, but also language and skin color. The results of Bahji et al. also show that gender and ethnicity were the most commonly cited risk factors for intimidation, harassment, and discrimination, but also training status [27].

According to our results, the persons or groups of people from whom discriminatory behavior emanated were mainly lecturers, but also other students, patients, executives and heads of everyday student life, nursing staff, administrative staff and supervisors of term papers and dissertations. Bahji et al. show that the most common sources of IHD were relatives/friends of patients, nurses, and patients. As they looked mainly at resident physicians, this might be the reason that lecturers and fellow students were cited less as a source of IHD [27]. Crutcher et al. showed that the persons from whom IHD emanated were mainly specialist physicians, followed by hospital nurses, specialty residents, and patients [37]. Karim and Duchcherer found similar results [36].

The results of Fnais et al. show that medical trainees mainly cited consultants as the source of harassment and discrimination, followed by patients or patients' families, nurses, fellows/residents, and others (faculty, interns, and students) [4].

Our results show that around one third of dental students indicate that discrimination occurs very often or often, compared to around ten percent of other students.

Dental students indicate significantly more often performance and skills as well as language compared to all other forms as perceived reason for discrimination. Dental students name lecturers, executives and heads in everyday student life significantly more often as persons or a group of persons from whom discriminatory behavior originated. Garbin et al. evaluated the experiences of sexual harassment in a dental school in Brazil. In their study, patients were cited as the main source of harassment, followed by faculty members; other dental students were cited less frequently [38]. A study by Webster at al. shows that almost 15% of dental students report sexual harassment at least once, female students are more often sexually harassed and students of higher study years more often than first year students [39].

In our study, dental students state that they have experienced discriminatory behavior, particularly during practical courses, in work situations and during exams. Lectures and seminars are only named with a share of around one third.

One third of dental students indicate that they have witnessed and/or experienced sexual harassment often, as compared to around ten percent of the other students. The reasons for this might stem from even stricter hierarchies in dental faculties. There are no studies on sexual harassment and discrimination referring only to dental lecturers.

Jenner et al. conducted a study on sexual harassment in a tertiary education facility, at Charité, focusing on the physicians. A proportion of 70% reported some form of misconduct while performing their work [33]. International studies also show high rates of sexual harassment among health care professionals [34, 35, 40, 41, 42].

As experiences of sexual harassment, lecturers most frequently cite that someone spoke derogatorily of women, men, homosexuals or other sexes, made lewd remarks about their appearance, clothing or sexual allusions or derogatory remarks, that they experienced unwanted physical contact, through apparently accidental touching or unnecessary physical proximity or that someone whistled at them unwantedly, stared immorally or gotten undressed with a glance. According to Jenner et al. the most common form of self-reported harassment was verbal harassment; including degrading speech and sexualized speech. Nonphysical misconduct was perceived as harassing by 76% of the individuals, more frequently by women than by men. Physical misconduct was perceived as harassing by 89% of those reporting such misconduct and as threatening by 28%, with no significant sex differences. The persons from whom sexual harassment emanated were mainly colleagues, directors/supervisors and patients. Jenner et al. also found that colleagues were cited as the main perpetrators [33].

We found that significantly more female students have experienced and observed discriminatory or undervaluing behavior and sexual harassment. National and international studies find the same results: Broad et al. also show that female students and students in clinical years had 2.6 (95% CI: 1.3–5.3) and 3.6 (95% CI: 1.9–7.0) greater odds, respectively, of experiencing or witnessing any type of discrimination or harassment [1, 28, 29]. Carr et al. showed that about half of female faculty but few male faculty experienced some form of sexual harassment: Female faculty were more than 2.5 times more likely faculty to perceive gender-based discrimination in the academic environment than male faculty [31].

The results of Jagsi et al. also show that women were more likely than men to report having personally experienced sexual harassment. Age was not a significant factor for students and lecturers in our study [43]. Carr et al. however, found age differences among women with the younger faculty reporting lower rates of discrimination than the older faculty [31].

More students with children have experienced and observed discriminatory behavior at the faculty. Verniers and Vala showed that the beliefs that a mother's career has a negative impact on the children and family life often leads to a lack of support or even opposition to a career of a women with children [2].

Limitations

This study also has limitations. As it is a single center study additional research is needed to demonstrate generalizability of the findings in regard to other institutions and contexts. Although a substantial absolute number of students and lecturers participated in the survey, the relative response rate was only 13% for students and 11% for lecturers. This may have a potential effect on the study results due to the bias in the selection of the students and lecturers. However, our response rate is in the range of what is generally achieved with email-initiated surveys [44].

Furthermore, there might be a misinterpretation of having experienced discrimination and/or sexual harassment and having witnessed or observed it.

Conclusion

Discrimination and sexual harassment at the workplace and in education institutions are global public health issues and do have detrimental effects on health, performance, work satisfaction, commitment to the workplace and thus productivity and innovation potential. They are prevalent in academic medicine among medical students, dental students and students of further study programs in the healthcare sector as well as lecturers. There are differences in the frequency, situations, perceived reasons and sources of discrimination and sexual harassment between students and lecturers. Dental students experience discrimination and sexual harassment more often, it occurs most often during practical courses and mainly from lecturers.

Female students and female faculty members are more often victims of discrimination and harassment. Specific programs for lecturers and students are necessary to raise awareness, educate the faculty about discrimination and sexual harassment and elaborate plans on how to prevent and respond to it and whom to address. Special attention should be paid to dental students and women.

National preventive strategies should be implemented to tackle issues of discrimination and harassment at the workplace and in higher education institutions for the different target groups.

Declarations

Ethics approval and consent to participate

The participants gave their written informed consent. The study was approved by IRB committee of Charité – Universitätsmedizin Berlin, Germany. All methods were performed in accordance with the relevant guidelines and regulations of Charité – Universitätsmedizin Berlin, Germany.

Consent for publication

The survey was anonymous. The participants were informed of the study and were formally

asked for their written consent to publish aggregated data.

Availability of data and materials

The datasets generated and/or analysed during the current study are not publicly available due to anonymous request of the survey and deliberate participation but are available from the corresponding author on reasonable request.

Competing interests

The author(s) declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Authors' contributions

MP, SJ, SOP and ST designed the study, RB and MP conducted and administered the study, SL and RB analyzed the data, SL drafted the manuscript, conducted literature research and prepared the figures, SOP, RB, ST, CK, MP, SJ reviewed the manuscript for important intellectual content. All authors have read and approved the revised manuscript.

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ST is a political scientist and sociologist (university diploma) and systemic therapist. She works as a therapist, coach and research associate at the Department for Teaching and Learning of the Charité - Universitätsmedizin Berlin, Germany, and has her private psychotherapeutical clinic in Berlin.

CK is the Central Representative for Gender Equality and Diversity at the Charité - Universitätsmedizin Berlin, Germany. Her main tasks lie in the field of counselling individuals and organizational structures at the medical university as a whole and single departments as well. Main topics of this work are sexual harassment, career planning and conflict solutions among colleagues.

SOP is a professor of sex and gender sensitive medicine at Radboud University in Nijmegen, the Netherlands and at Bielefeld University, Germany. Her main goal is implementing sex and gender-sensitive (bio)medical research and care. She also focuses on the prevention of sexual harassment and gender discrimination both in research and as a consultant with academic institutions.

MP is head of the Quality Assurance Section of the Department for Teaching and Learning at Charité – Universitätsmedizin Berlin, Germany. She focuses on initiating change on the basis of systematic data collection. The goal of realizing high-quality teaching requires the analysis of error causes and puts the development of a dialog-oriented error and learning culture in the center.

References

1. Broad J, Matheson M, Verrall F, Taylor AK, Zahra D, Alldridge L, Feder G. Discrimination, harassment and non-reporting in UK medical education. MedicEduc. 2018; 52: 414–426. doi: 10.1111/medu.13529
2. Verniers C, Vala J. Justifying gender discrimination in the workplace: The mediating role of motherhood myths. PLoS ONE. 2018; 13(1): e0190657. https://doi.org/10.1371/journal. pone.0190657
3. National Academies of Sciences, Engineering, and Medicine 2018. Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine. Washington, DC: The National Academies Press. 2018. https://doi.org/10.17226/24994.
4. Fnais N, Soobiah C, Chen MH, Lillie E, Perrier L, Tashkhandi M, Straus SE, Mamdani M, Al-Omran M, Tricco AC. Harassment and discrimination in medical training. Acad Med. *2014;* 89 *(*5*):*817–27.
5. Fundamental Rights Agency. (2014). Violence against women: An EU-wide survey: Results at a glance. 2014. https://fra.europa.eu/en/publication/2014/violence-against-women-eu-wide-survey-main-results-report. Accessed 14 March 2023.
6. Correll SJ, Benard S, Paik I. Getting a Job: Is There a Motherhood Penalty? Am J Sociol. 2007; 112(5): 1297±1339.
7. Ilies R, Hauserman N, Schwochau S, Stibal J. Reported incidence rates of workrelated sexual harassment in the United States: Using meta-analysis to explain reported rate disparities. Personnel Psychology. 2033; 56(3), 607–631. https://doi.org/10.1111/j.1744-6570.2003.tb00752.x.
8. International Labour Organization. Sexual harassment at work. Fact Sheet. 2007. https://www.ilo.org/declaration/info/factsheets/WCMS_DECL_FS_96_EN/lang–en/index.htm. Accessed 14 March 2023.

9. Magnavita N, Heponiemi T. Workplace violence against nursing students and nurses: An Italian experience. *J* Nurs Scholarsh. 2011; 43:2, 203–210. https://doi.org/10.1111/j.1547-5069.2011.01392.x
10. Willness CR, Steel P, Lee K. A meta-analysis of the antecedents and consequences of workplace sexual harassment. Personnel Psychology. 2007; 60(1), 127–162. https://doi.org/10.1111/j.1744-6570.2007.00067.x
11. Raver JL, Gelfand MJ. Beyond the individual victim: Linking sexual harassment, team processes and team performance. Academy of Management Journal. 2005; 48(3), 387–400. https://doi.org/10.5465/AMJ.2005.17407904
12. Merkin RS. The impact of sexual harassment on turnover intentions, absenteeism, and job satisfaction: Findings from Argentina, Brazil and Chile. Journal of International Women's Studies. 2008; 10(2), 73–91. http://vc.bridgew.edu/jiws/vol10/iss2/7
13. Lapierre LM, Spector PE, Leck JD. Sexual versus nonsexual workplace aggression and victims' overall job satisfaction: A meta-analysis. Journal of Occupational Health Psychology. 2005; 10(2), 155–169.
14. Fitzgerald LF, Drasgow F, Hulin CL, Gelfand M J, Magley VJ. Antecedents and consequences of sexual harassment in organizations: A test of an integrated model. Journal of Applied Psychology. 1997; 82(4), 578–589.
15. McDonald P. Workplace sexual harassment 30 years on: A review of the literature. International Journal of Management Reviews. 2012; 14(1), 1–17. https://doi.org/10.1111/j.1468-2370.2011.00300.x
16. International Labour Organization. (2015). Code of Conduct on Sexual Harassment in the Workplace Brochure. 2015. http://www.ilo.org/global/docs/WCMS_371182/lang–en/index.htm. Accessed 14 March 2023.
17. Latcheva R. Sexual harassment in the European Union: A pervasive but still hidden form of gender-based violence. Journal of Interpersonal Violence. 2017; 32(12), 1821–1852. https://doi.org/10.1177/0886260517698948
18. Antidiskriminierungsstelle des Bundes [German Federal Antidiscrimination Agency]. AGG-Wegweiser: Erläuterungen und Beispiele zum Allgemeinen Gleichbehandlungsgesetz [AGG Guide: Explanations and Examples in relation to the General Law for Equal Treatment]. 2022. https://www.antidiskriminierungsstelle.de/SharedDocs/downloads/DE/publikationen/Wegweiser/agg_wegweiser_erlaeuterungen_beispiele.html. Accessed 14 March 2023.
19. Gelfand MJ, Fitzgerald LF, Drasgow F. The structure of sexual harassment: A confirmatory analysis across cultures and settings. Journal of Vocational Behavior. 1995; 47(2), 164–177. https://doi.org/DOI:10.1006/jvbe.1995.1033
20. Thurston RC, Chang Y, Matthews KA, von Känel R, Koenen K. Association of sexual harassment and sexual assault with midlife women's mental and physical health. Journal of American Medical Association Internal Medicine. 2019; 179(1), 48–53. https://doi.org/10.1001/jamainternmed.2018.4886
21. Stock SR, Tissot F. Are there health effects of harassment in the workplace? A gender-sensitive study of the relationships between work and neck pain. Ergonomics. 2012; 55(2), 147–159. https://doi.org/10.1080/00140139.2011.598243
22. Nielsen MB, Einarsen S. Prospective relationships between workplace sexual harassment and psychological distress. Occupational Medicine. 2012; 62(3), 226–228. https://doi.org/10.1093/occmed/kqs010
23. Rospenda KM, Richman JA, Shannon CA. Prevalence and mental health correlates of harassment and discrimination in the workplace: Results from a national study. Journal of Interpersonal Violence. 2009; 24(5), 819–843. https://doi.org/10.1177/0886260508317182
24. Chan DKS, Chow SY, Lam CB, Cheung SF. Examining the job-related, psychological, and physical outcomes of workplace sexual harassment: A meta-analytic review. Psychology of Women Quarterly. 2008; 32(4), 362–376. https://doi.org/10.1111/j.1471-6402.2008.00451.x
25. Harned MS, Fitzgerald LF. Understanding a link between sexual harassment and eating disorder symptoms: A mediational analysis. Journal of Consulting and Clinical Psychology. 2002; 70(5), 1170–1181.
26. Fitzgerald LF, Hulin CL, Drasgow F. The antecedents and consequences of sexual harassment in organizations: An integrated model. In: Keita GP, Hurrell JJ, editors. Job stress in a changing workforce: Investigating gender, diversity, and family issues. 1994; American Psychological Association; 1994. p. 55–73.
27. Bahji, A, Altomare, J. Prevalence of intimidation, harassment, and discrimination among resident physicians: a systematic review and meta-analysis. CMEJ. 2020; 11(1) e97-e123.
28. Schoenefeld E, Marschall B, Paul B, Ahrens H, Sensmeier J, Coles, J, Pfleiderer B. Medical education too: sexual harassment within the educational context of medicine - insights of undergraduates. BMC Medical Education. 2021; 21:81. https://doi.org/10.1186/s12909-021-02497
29. Jendretzky K, Boll L, Steffens S, Paulmann V. Medical students' experiences with sexual discrimination and perceptions of equal opportunity: a pilot study in Germany. BMC Medical Education. 2020; 20:56. https://doi.org/10.1186/s12909-020-1952-9
30. Heru A, Gagne G, Strong D. Medical student mistreatment results in symptoms of posttraumatic stress. Acad Psychiatry. 2009; 33 *(4).*302–6.
31. Carr PL, Ash AS, Friedman RH, Szalacha L, Barnett RC, Palepu A, Moskowitz MM. Perceptions of gender discrimination and sexual harassment in academic medicine. Ann Intern Med. 2000;132(11):889-896. doi: 10.7326/0003-4819-132-11-200006060-00007.
32. Jenner S, Djermester P, Prügl J, Kurmeyer C, Oertelt-Prigione S. Physician work environment and well-being: prevalence of sexual harassment in academic medicine. Res Lett JAMA Intern Med.2019; 179(1):108–11. https://doi.org/10.1001/jamainternmed.2018.4859.
33. Jenner SC, Djermester P, Oertelt-Prigione S. Prevention Strategies for Sexual Harassment in Academic Medicine: A Qualitative Study. Journal of Interpersonal Violence. 2020; 1–26 DOI: 10.1177/0886260520903130

34. Wang LJ, Chen CK, Sheng YC, Lu PW, Chen YT, Chen HJ, Lin JS. Workplace sexual harassment in two general hospitals in Taiwan: The incidence, perception, and gender differences. Journal of Occupational Health. 2012; 54(1), 56–63. https://doi.org/10.1539/joh.11-0063-FS
35. Wu SY, Zhu W, Li HY, Lin SW, Chai WL, Wang XR. Workplace violence and influencing factors among medical professionals in China. American Journal of Industrial Medicine. 2012; 55(11), 1000–1008. https://doi.org/10.1002/ajim.22097
36. Karim S, Duchcherer M. Intimidation and harassment in residency: a review of the literature and results of the 2012 Canadian Association of Interns and Residents National Survey. Can Med Educ J. 2014; 5(1):e50-7. https://doi.org/10.36834/cmej.36667
37. Crutcher RA, Szafran O, Woloschuk W, Chatur F, Hansen C. Family medicine graduates' perceptions of intimidation, harassment, and discrimination during residency training. BMC Med Educ. 2011; Oct 24;11:88. https://doi.org/10.1186/1472-6920-11-88
38. Garbin CAS, Zina LG, Garbin AJI, Moimaz SAS. Sexual harassment in Dentistry: prevalence in dental school. J Appl Oral Sci. 2010; 18 (5). http://dx.doi.org/10.1590/S1678-77572010000500004
39. Webster DB, Smith TA, Marshall EO, Seaver DC, Szeluga MA, Lillich TT. Dental students' sexual harassment experiences and attitudes. Journal of Dental Education. 1999; 63; 9, 665-672. https://doi.org/10.1002/j.0022-0337.1999.63.9.tb03301.x
40. Cheung T, Lee PH, Yip PSF. Workplace violence toward physicians and nurses: Prevalence and correlates in Macau. International Journal of Environmental Research and Public Health. 2017; 14(8), Article 879. https://doi.org/10.3390/ijerph14080879
41. Fallahi Khoshknab M, Oskouie F, Ghazanfari N, Najafi F, Tamizi Z, Afshani S, Azadi G. The frequency, contributing and preventive factors of harassment towards health professionals in Iran. International Journal of Community Based Nursing & Midwifery. 2015;3(3):156–164.
42. deMayo RA. Patient sexual behaviors and sexual harassment: A national survey of physical therapists. Physical Therapy. 1997;77(7):739-744.
43. Jagsi R, Griffith KA, Jones R, Perumalswami CR, Ubel P, Stewart A. Sexual Harassment and Discrimination Experiences of Academic Medical Faculty. JAMA. 2016; 315(19):2120-2121. doi:10.1001/jama.2016.2188
44. Shih TH, Fan X. Comparing response rates in e-mail and paper surveys: A meta-analysis. Educ Res Rev. 2009; 4(1):26-40.

Tables

Tables are available in Supplementary Files section.

Figures

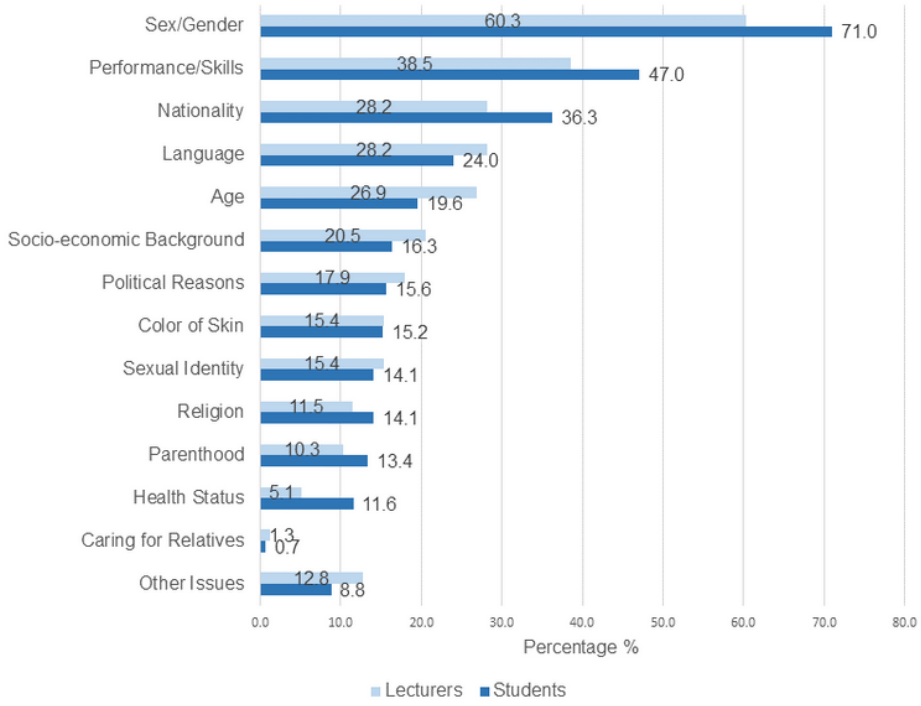

Figure 1: Perceived reasons for discrimination among students (n=455) and lecturers (n=78). Multiple answers were possible

Figure 1

See image above for figure legend

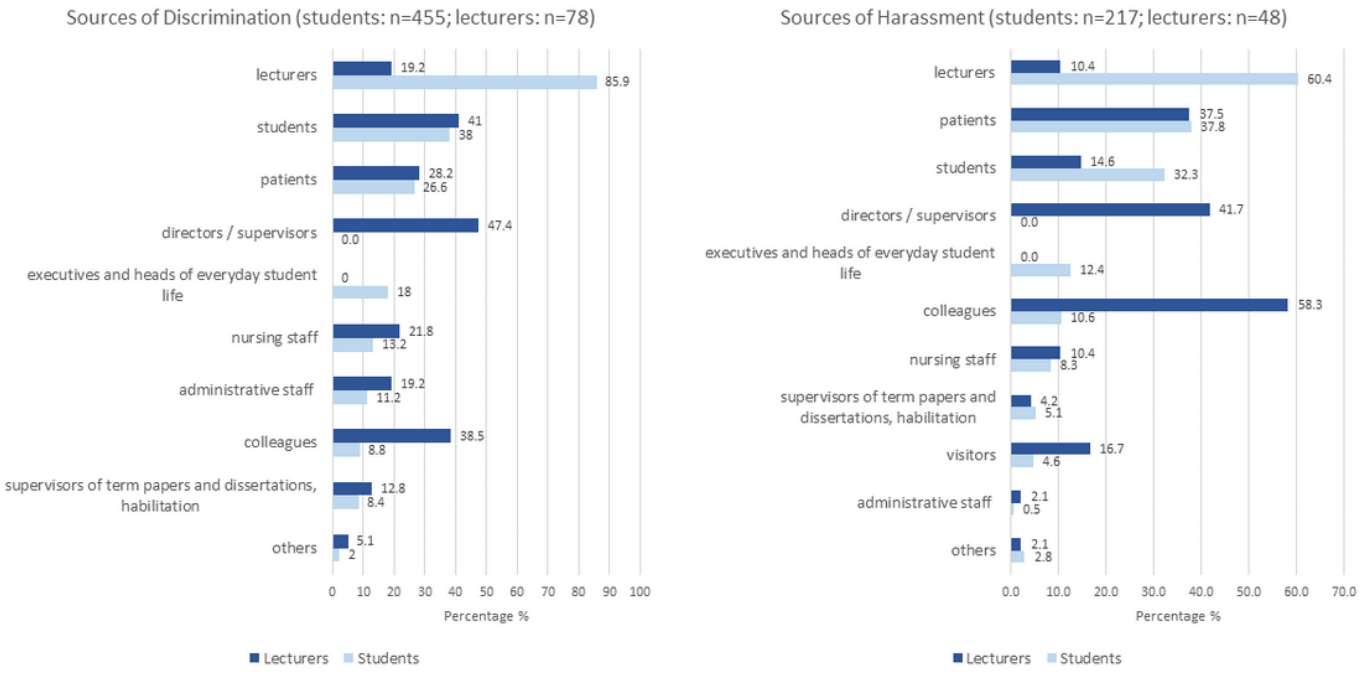

Figure 2: Sources of discrimination (students: n=455; lecturers: n=78) and harassment (students: n=217; lecturers: n=48)

Figure 2

See image above for figure legend

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- BMCMedEduHarassmentinAcademicMedicineTable1.xlsx
- BMCMedEduHarassmentinAcademicMedicineTable2.xlsx
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- BMCMedEduHarassmentinAcademicMedicineTable4.xlsx
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