ONLINE: THE NEW MEDICAL STUDENT JAMA

STUDENTS’ EXPERIENCES OF HARASSMENT AND DISCRIMINATION

A ROLE FOR TELEVISION IN MEDICAL EDUCATION?
Editor's Note

Online: The New Medical Student JAMA and a Web of Possibilities

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Virtually unlimited space; 24-hour access; real-time news and information; interactive communications; multimedia presentations; supplemental worldwide resources. For these reasons and more JAMA is committed to online publishing. The newest offspring of this commitment is the Medical Student JAMA (MS/JAMA), which launches its Web site this month. MS/JAMA’s goal is to maximize the advantages inherent in the Internet to provide medical students with comprehensive resources and timely announcements to assist them throughout the course of their schooling.

The highlights of this site consist of articles found each month on the printed pages of the Medical Student JAMA (formerly Pulse), plus features available only on the Web site. These include online articles that complement those found in print, winning essays from the John Conley Ethics Essay Contest for medical students, and poems from the William Carlos Williams Medical Student Poetry Contest. The flexibility of the Web will allow us to link letters with the original articles, in essence creating a seamless dialogue between reader, writer, and editor. This site will offer practical resources to facilitate the transition from one student year to the next and from student to physician.

In collaboration with the Medical Student Section of the American Medical Association, we will be including listings of community service opportunities, legislative updates on federal decisions affecting medical students, plus guidance on choosing a medical specialty and managing a career in medicine. We plan to organize links to the growing number of online tutorial programs that teach the preclinical regimen of biochemistry, anatomy, and physiology using the multimedia capabilities of the Internet. Virtual discussion rooms will be constructed to provide interactive arenas for comments on articles appearing in MS/JAMA. These and other arms of the Web site will be evolving during the coming year as we gather new resources and determine how to facilitate their use online.

Unaltered will be the commitment to editorial excellence of everyone involved in this project. All components of the Web site will be selected, reviewed, and edited with the same scrutiny as manuscripts destined for print publication. The MS/JAMA print version will continue to appear in JAMA the first issue of the month, September through May, but with continuity of publication online during the summer months. For all the technological wizardry of the Internet, paper still wins when it comes to portability, versatility, and feel.

We invite readers to visit the MS/JAMA Web site at http://www.ama-assn.org/msjama. We welcome your feedback as we build a resource that can enhance medical training, whether by offering educational and informational tools, featuring student writing, or simply providing an interactive space where students can discuss their experiences in becoming physicians.

References

Cover: Chairs (oil on canvas) by Patricia Wong, Stanford University School of Medicine

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Context.—Harassing and discriminating behaviors on the part of instructors or supervisors are known to affect the quality of work performed by medical students, influence their career decisions, and have other undetermined long-term consequences.

Objective.—To assess the prevalence and forms of harassment and discrimination experienced by 1996 medical school graduates.

Design.—A self-administered survey of harassment and discrimination mailed to graduating medical students.

Setting and Participants.—A total of 1001 graduating medical students at 8 US medical schools (4 public and 4 private), chosen from each of the 4 regions designated by the Association of American Medical Colleges for geographic categorization.

Outcome Measure.—The number of reported experiences of various forms of harassment and discrimination while attending medical school.

Results.—Of 1001 surveys, 548 (55%) were returned. Overall, 46% of the students reported experiencing some form of harassment and 41% some form of discrimination from instructors or supervisors while attending medical school. Nonsexual verbal harassment was reported by 41%; sexual verbal harassment was reported by 10%. Discrimination based on gender was reported by 29% of students; discrimination based on race was reported by 12%.

Conclusions.—Harassment and discrimination of medical students by instructors and supervisors continue to occur frequently, and new approaches are needed to address these problems.

Harassment and discrimination adversely affect performance, productivity, and learning in professional and academic settings. Definitions of harassment and discrimination vary across legal and lay usage. In 1991, Lenhart and Evans defined harassment as verbal or physical conduct that creates an intimidating, hostile work or learning environment in which submission to such conduct is a condition of one’s professional training. The same group defined discrimination as those behaviors, actions, interactions, and policies that adversely affect one’s work because of disparate treatment, disparate impact, or the creation of a hostile or intimidating work or learning environment. Common forms of discrimination include those based on gender, age, religion, ethnicity, and race.

Abusive experiences are known to have a negative effect on the attitudes, behaviors, and learning capability of medical students. Recent reports indicate that between 72% and 99% of senior students experience some form of harassment from instructors, peers, patients, or staff during medical school. However, the majority of these studies were conducted at single institutions using small sample sizes. The prevalence of discrimination among medical students in academic settings is not as well documented. This multicenter survey assesses the prevalence and forms of harassment and discrimination experienced by a large sample (n=548) of 1996 medical school graduates.

Methods

A questionnaire was distributed to 1001 graduating medical students at 8 US medical schools (4 public, 4 private), 2 schools in each of the 4 regions used by the Association of American Medical Colleges (AAMC) for geographic categorization. Schools were chosen for inclusion by convenience and willingness to participate, not by a strict, randomization scheme. Questionnaires and return envelopes were placed in students’ school mailboxes and were returned independently. Individual follow-up was not possible. The questionnaire was institutionally developed and contained sections taken from the Centers for Disease Control and Prevention’s Behavioral Risk Factor Surveillance System questionnaire.

Two questions assessed the subjective experiences of harassment and discrimination (Tables 1 and 2). To characterize their experiences of harassment (verbal, physical, or sexual) and discrimination (gender, age, racial, or religious), respondents were asked to choose as many responses as were applicable. Students were not given a definition or examples of either harassment or discrimination. The questionnaire as a whole was not conclusively assessed for reliability and validity. Data were collected from April to June of 1996. Analyses were conducted using SPSS (Version 6.1, SPSS, Inc). Nonparametric tests were used for group comparisons.

Results

A total of 1001 questionnaires were mailed and 548 (55%) returned. Response rates from the individual schools ranged from 44% to 69%. Students from public and private universities comprised 61% and 39% of the sample, respectively. The sample included a smaller proportion of female students than male students (44% and 56%, respectively) and fewer nonwhite racial/ethnic groups than whites (27% and 73%, respectively) (Table 1). Respondents’ ages ranged from 23 to 47, the median age being 26 years (mean, 27.5 years).

Among respondents, 46% reported experiencing some form of harassment while enrolled in medical school (Table 1); nonsexual verbal harassment was most commonly reported (41%). Female students were significantly more likely than male students to report any form of harassment (54% and 39%, respectively; \( P<.001 \)), nonsexual verbal harassment (46% and 36%, respectively; \( P=.02 \)), and sexual verbal harassment (20% and 2%, respectively; \( P<.0001 \)). Sexual harassment of any form was reported by 10% of students and by more women than
men (21% and 2%, respectively; *P* < .00001).

A total of 41% of students reported experiencing some form of discrimination during medical school. Female students reported experiencing discrimination more often than male students (52% and 33%, respectively; *P* < .00001). Nonwhite racial/ethnic groups (blacks, Asians, and Hispanics) reported more discrimination than did whites (74%, 44%, 50%, and 39%, respectively; *P* = .04) (Table 2). Female students were significantly more likely than male students to report gender discrimination (47% and 14%, respectively; *P* < .00001). Nonwhite racial/ethnic groups (blacks 68%, Asians 28%, Hispanics 40%) were significantly more likely to report racial discrimination than were whites (3%; *P* < .00001). Discrimination because of age was significantly more likely to be reported by the oldest age group (29 years and older) (*P* = .02) and discrimination because of religion was significantly more likely to be reported by male students than by female students (6.8% and 2.1%, respectively; *P* = .01).

**Comment**

Many cross-sectional studies have been conducted over the past 15 years to assess the prevalence of medical student harassment. In 1990, the AAMC added questions about harassment and discrimination to their annual graduation questionnaire. Between 1990 and 1992, 5

| Table 1.—Number (Percent) of Respondents Reporting Each Form of Harassment* |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Gender                          | Any Form of Harassment | Sexual Harassment, Any Form | Verbal Harassment | Physical Harassment |
| Male                            | 307 (56.0)        | 120 (39.1)†      | 7 (2.3)†        | 111 (36.2)§      | 7 (2.3)†        |
| Female                          | 241 (44.0)        | 131 (54.4)†      | 50 (20.7)†      | 111 (46.1)§      | 47 (19.5)§      |
| Age, y                          | 173 (25)          | 147 (26.9)†      | 72 (49.0)†      | 18 (12.2)†       | 63 (42.9)†      |
|                                 | 240 (26)          | 273 (42.9)†      | 114 (42.5)†     | 28 (10.4)†       | 102 (38.1)†     |
|                                 | 131 (24.0)        | 137 (48.9)†      | 10 (7.6)†       | 57 (43.5)†       | 9 (6.9)†        |
| Race/ethnicity#                 |                  |                 |                 |                 |                 |
| White                           | 401 (73.3)        | 184 (45.9)†      | 43 (10.7)†      | 163 (40.6)†      | 41 (10.2)†      |
| Black                           | 19 (3.5)          | 9 (47.4)†        | 0 (0.0)†        | 8 (42.1)†        | 0 (0.0)†        |
| Asian                           | 95 (17.4)         | 39 (41.1)†       | 6 (6.3)†        | 34 (35.8)†       | 6 (6.3)†        |
| Hispanic                        | 20 (3.7)          | 11 (55.0)†       | 3 (15.0)†       | 10 (50.0)†       | 3 (15.0)†       |
| All other                       | 12 (2.2)          | 8 (66.7)†        | 5 (41.7)†       | 7 (58.3)†        | 4 (33.3)†       |
| Overall                         | 548 (100.0)       | 251 (45.8)       | 57 (10.4)       | 222 (40.5)       | 54 (9.9)        |

*Responses to the question, “Concerning your interactions with instructors or supervisors during your 4 years in medical school, were you ever harassed (a) verbally, in a sexual manner (b) verbally, not in a sexual manner (c) physically, in a sexual manner (d) physically, not in a sexual manner (e) other (f) No harassment.”

† *P* < .001.
‡ *P* < .00001.
§ *P* = .02.
¶ *P* = not significant.
**Cell sizes too small to calculate *P* values.

#Two respondents did not list their age and one did not list race/ethnicity.

| Table 2.—Number (Percent) of Respondents Reporting Each Form of Discrimination* |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|
| Gender                          | Any Form of Discrimination | Gender Discrimination | Racial Discrimination | Age Discrimination |
|                                 | Respondents       | Male            | Female          | Male            | Female          |
| Male                            | 100 (32.6)†       | 43 (14.0)†      | 44 (14.3)†      | 10 (3.3)§       | 21 (6.8)        |
| Female                          | 126 (52.3)†       | 114 (47.3)†     | 20 (8.3)‡       | 13 (5.4)§       | 5 (2.1)         |
| Age, y                          | 85 (25)           | 61 (41.5)§      | 44 (29.9)§      | 24 (16.3)†      | 6 (4.1)†        |
|                                 | 113 (26)          | 79 (29.9)§      | 33 (12.3)§      | 6 (2.2)¶       | 3 (1.5)         |
|                                 | 52 (39.7)†        | 34 (26.0)§      | 7 (5.3)§        | 11 (8.4)¶      | 7 (5.3)         |
| Race/ethnicity#                 |                  |                 |                 |                 |                 |
| White                           | 155 (38.7)#       | 121 (30.2)**    | 12 (3.0)†       | 20 (5.0)**      | 15 (3.7)**      |
| Black                           | 14 (73.7)#        | 6 (31.6)**      | 13 (68.4)†      | 0 (0.0)**       | 5 (53.8)**      |
| Asian                           | 42 (44.2)#        | 22 (23.2)**     | 27 (28.4)‡      | 2 (2.1)**       | 7 (7.4)**       |
| Hispanic                        | 10 (50.0)#        | 5 (25.0)**      | 8 (40.0)†       | 1 (5.0)**       | 0 (0.0)**       |
| All other                       | 5 (41.7)†         | 3 (25.0)**      | 4 (33.3)†       | 0 (0.0)**       | 3 (25.0)**      |
| Overall                         | 226 (41.2)        | 157 (28.6)‡     | 64 (11.7)       | 23 (4.2)        | 26 (4.7)        |

*Responses to the question, “Concerning your interactions with instructors or supervisors during your 4 years in medical school, did you at any time feel that you were discriminated against in relation to your (a) race (b) gender (c) age (d) religious beliefs (e) other (f) No discrimination.”

† *P* < .00001.
‡ *P* = .03.
§ *P* = not significant.
¶ *P* = .02.
**Cell sizes too small to calculate *P* values.
A separate study reported the prevalence of sexual harassment to be greater than 70%. Unfortunately, the majority of published studies do not provide a complete representation of US medical students. Most were conducted at single institutions with small sample sizes and/or poor return rates. An exception to this is the AAMC questionnaire, which was completed in 1996 by more than 80% of graduating medical students nationwide. The questionnaire results showed that 48% of the 13,168 respondents experienced at least one episode of mistreatment while in medical school. This finding is comparable to the 46% prevalence of medical student harassment reported here for the same graduating class. This similarity in prevalence could be due to the geographically varied multicenter survey strategy employed in both the AAMC questionnaire and in this study. The demographic composition of this survey’s respondents (and that of respondents to the AAMC questionnaire) were comparable with the distribution of US medical students by age, gender, race, and attendance at private or public schools.

The occurrence of harassment or discrimination has been assessed in previous questionnaires by providing examples of interactions between medical students and people with whom they interact. These interactions are then categorized by type of harassment (verbal, sexual, or physical) or discrimination (gender-, racial-, or age-related). This objective determination of “harassment” and “discrimination” has been used to facilitate study comparisons. In the present study, rather than provide researcher-imposed constructs of harassment and discrimination, students determined whether they had experienced harassment and discrimination according to their personal understanding of these terms. This may provide a more comprehensive assessment of harassment and discrimination, although it limits comparability with previous studies. The use of only 2 questions in this study decreases the sensitivity and specificity of the measurement instrument; however, prior studies may inflate the measured prevalence of student experiences of harassment and discrimination through extensive questioning.

Results of the subgroup analysis from this study were similar to those of previous studies. Women were more likely than men to report any form of verbal, physical, or sexual harassment and any form of discrimination. These findings support the results of Komaromy and colleagues, who assessed the prevalence and sources of sexual harassment in 1993 among 133 internal medicine residents. That study found that women were more likely than men to report experiencing sexual harassment from attending physicians, fellows, or other residents; men were more likely to report sexual harassment from patients, nurses, and other staff members.

The use of a self-report survey carries with it many of the inherent limitations of a cross-sectional study, including recall bias and reporting errors. This study had a 45% non-response rate that introduces a bias of unknown quantity. Finally, results from this study may not be strictly comparable to those previously published because of its unique question format. Despite these limitations, this study demonstrates a continued high prevalence of harassment and discrimination experienced by medical students.

Sexual harassment remains an important issue that medical institutions must address—one in every 5 female medical students reports experiencing sexual harassment from an instructor or supervisor at least once during medical school. Discrimination based on gender and race are also vital important areas for concern at medical institutions.

References

Additional and expanded articles can be found on the MS/JAMA Web Site at http://www.ama-assn.org/msjama
On Thursday evenings countless medical students nationwide set aside their course notes to watch the latest episode of ER, the popular NBC television drama that chronicles the lives of fictional emergency department personnel at a Chicago teaching hospital. The program’s frantic style blends medical terminology with theatrical scenarios as upbeat background music and shifting camera angles mesmerize viewers. Unquestionably more intense than a textbook, ER captivates medical students with its synthesis of medical realism and modern-day drama. This brainchild of Harvard Medical School graduate Michael Crichton certainly entertains viewers, but one could contend that students are actually studying—albeit not in the traditional, didactic manner.

Medical education has been described as a process of socialization in which students are taught to acquire the beliefs and behaviors that will identify them as physicians. Likewise, television has also been described as a medium that molds viewers’ attitudes and behaviors, thereby shaping their social identity. Medical students’ reactions to televised medical dramas like ER suggest that they may incorporate the attitudes and beliefs of physicians on television in much the same way they acquire the qualities and behaviors of physicians through their experiences in patient care.

ER uniquely contributes to the genre of medical dramas that spans decades: Ben Casey and Dr Kildare in the 1960s, Marcus Welby, MD, and M*A*S*H in the 1970s, and St Elsewhere and Trapper John, MD, in the 1980s. The hospital scenes in ER occur on an elaborately realistic set where the medical team encounters emergency medicine cases ranging from drug overdoses and rape victims to motor vehicle crashes and gunshot wounds. The 1997 season premiere went so far as to present the show as though it were a medical documentary.

The cast of ER physicians includes, among others, Mark Greene, the cynical emergency medicine attending physician; Kerry Weaver, the utilitarian emergency medicine attending physician; Peter Benton, the taciturn senior resident in surgery; Doug Ross, the soft-spoken pediatric emergency fellow; and John Carter, the enthusiastic emergency medicine resident. Goggles, latex gloves, white coats, and surgical scrubs are the modern armor for these heroes battling in the trenches of televised medicine.

Given its tendency to glamorize the work of emergency department physicians, ER has the potential to bias students’ career choices. Wallack and Bingle note a 2-fold increase in the number of fourth-year medical students at Indiana University enrolling in emergency medicine residency programs since 1994, the year of ER’s premiere. Nationally, applicants to emergency medicine residency programs have increased from 4% of total US senior students entering the resident match in 1994 to 5.2% in 1997. While ER is obviously not the only factor influencing students’ career choices, the program does shape the cultural image of emergency medicine physicians, perhaps creating a more appealing career path for the undecided medical student.

ER participates in expanding students’ knowledge of clinical medicine by presenting a wealth of medical jargon and patient scenarios each week. Students update their medical vocabulary as they recognize the acronyms, drug names, and diagnoses being tossed around the fictional emergency room. Moreover, the characters on the show obtain patient histories, deliver tragic news to patients, and dispute the opinions of coworkers. Especially for medical students in their preclinical years, the televised physicians of ER may offer students their most vivid glimpse into the practice of medicine. Interestingly, the total time that a student could spend watching weekly episodes of ER over 4 years rivals the duration of a typical emergency medicine rotation at most schools.

Of course, a television drama has its limitations as a clinical teaching tool. ER uses physicians as writers and consultants in an attempt to reflect the actual practice of medicine, but some critics identify ER as a source of medical misinformation. Diem and colleagues and Markert and Saklayen describe the disparity between cardiopulmonary resuscitation (CPR) long-term survival rates (67%) in the television programs ER, Chicago Hope, and Rescue 911 and actual CPR survival rates (14.7%) in the medical literature. The writer and producer of ER, Neal Baer, MD, acknowledges that while efforts are made to depict accurate and credible medical care, the show’s dramatic foundation is primary.

Superceding the show’s educational role is its ability to shape medical students’ perceptions of appropriate physician behavior. The ER characters may be mirrors for students wherein they validate desirable qualities, such as compassion, and also exhibit less appealing traits, such as competitiveness. Depictions of the controlling attending, arrogant surgeon, or blundering medical student are often realized on ER, forcing students to confront their own preconceptions of their profession. Some students may embrace these stereotypical portrayals wholeheartedly, whereas others may use them as points of reflection in forming a professional identity. The program ultimately exposes students to qualities that either reinforce or contradict the influence of real life physicians.

The popularity of ER among students raises interesting questions about the role of the media in shaping aspiring doctors’ perceptions about their chosen profession. Does the show cultivate the development of spurious attitudes toward various medical specialties? Do ER physicians set the contemporary standard for the ideal physician? Although most will agree that ER provides a captivating escape from one’s studies, a latent socialization force may also operate in tandem with its entertaining storylines. More importantly, the phenomenon of ER forces students to think...
carefully about the distinction between fantasy and reality in the construction of physicians’ professional identity. If medicine lends itself so readily to television fiction, it is perhaps because the medical profession itself is built on social fictions surrounding the authority and functions of doctors.

References

An Interview with Neal Baer, MD, the Doctor Behind ER

Q: How did you become involved in medicine and screenwriting?

A: Prior to medical school, I attended film school at the American Film Institute, and I was also a graduate student in sociology at Harvard, where I studied family policy. My writing and directing background include an ABC After-school Special, Private Affairs, and an episode of China Beach, as well as an unproduced movie for Paramount called The Lost Mariner, based on a story from Oliver Sacks’ book, The Man Who Mistook His Wife for a Hat. When ER started 4 years ago, I had finished my third year of medical school at Harvard. I finished school by doing electives at UCLA and returning to Harvard during ER breaks to complete core rotations and graduated in 1996. Currently, I am an intern in pediatrics at Children’s Hospital of Los Angeles as well as the supervising producer and writer of ER. You might wonder how I do both. I work as a resident during ER hiatuses, most recently in December of 1997 and March, April, and May of 1998. I’m not certain when I will complete my residency, but I do want to obtain my license and practice pediatrics.

Q: What do you do on the show?

A: Well, I write between 2 to 4 episodes a year, and I develop the medical stories for the other episodes. I also work as a producer, which means I supervise all the elements that go into making a television show: casting an episode; working with the art director, makeup and wardrobe designer; collaborating with the director; supervising the editing process for those episodes I write. I also handle all the mail that relates to medical issues, and I develop other projects that draw on ER to promote public health. One of those projects is Following ER, which takes a medical topic from a show each week and then develops a 2-minute segment that is aired on the local NBC affiliate. For example, we did a show that had a scene in which Greene [an attending physician] quits smoking. Later that night on the local news, a segment was offered that discussed how smokers can quit their habit.

Q: How are physicians involved with the show?

A: Two of the 7 writers on the show are physicians. Besides me, the other doctor is an emergency physician who practices several times a month. The 2 of us review all the scripts for medicine. I often call specialists around the country for input and clarification. For instance Harvey Makadon is a specialist at Beth Israel in Boston in treating HIV and AIDS and provides us with up-to-date information for the Jeanie Boulet character. Harold Varmus, head of NIH, has helped us out on such topics as bone marrow transplants, new treatments for strokes, and blood substitute products. The CDC has been helpful on tuberculosis and hepatitis A cases. Stuart Siegal, an oncologist at Children’s Hospital Los Angeles, has helped make sure we’re accurate on stories dealing with childhood cancer. Mark Greenberg is the director of the pediatric pain service at UC San Diego and provides information on pediatric pain management. The Kaiser Family Foundation helps us on reproductive issues. On the set itself, 2 emergency physicians, alternating episodes, teach the actors how to make the scenes appear realistic.

Q: What effects do you think ER has on medical students?

A: We hope that medical students can find a bit of themselves in the characters; after all, the stories are drawn from experiences that are in many ways universal: trying to do well when you’re exhausted; trying to cope with a patient’s death; dealing with competition. We show medical students coping with life on the wards and in the ER, and I think that’s one reason why students watch. They say, “Oh yeah, that happened to me, I felt like an idiot in front of the attending.” I don’t know whether students directly acquire that happened to me, I felt like an idiot in front of the attending.” I don’t know whether students directly acquire

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