

Virtual Mentor

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Journal discussion

Early evidence of unprofessional behavior found in medical student records

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Papadakis MA, Teherani A, Banach MA, et al. Disciplinary action by medical boards and prior behavior in medical school. *N Engl J Med.* 2005;353:2673-2682, e22.

As recently as a few decades ago, there was no mention of “professionalism” in most medical school curricula [1]. Since then, medical education has increasingly focused on professionalism and such related topics as ethics and humanism. Today, several governing bodies including the American Association of Medical Colleges (AAMC) and the Accreditation Council for Graduate Medical Education (ACGME) endorse curricular attention to these matters, both in medical school and in subsequent residency training [2, 3]. It seems agreed upon that these topics are central to the development of good physicians. Unfortunately, little objective data exists to support this claim. For this reason, the study by Maxine Papadakis and her colleagues is significant.

The randomized controlled trial, or RCT, is the agreed-upon gold standard for evidence in modern medicine. For clinical topics like myocardial infarction literally thousands of RCTs are indexed electronically in the Medline database of the National Institutes of Health (NIH), accessible via PubMed.com. To the contrary, a PubMed search of RCTs containing the keyword “professionalism” yields only five results [4]. Even a search limited to non-randomized clinical trials yields just 22 results, and there is no MeSH (medical subject heading) search term for the topic of professionalism. In contrast, a search for *editorials* containing the keyword “professionalism” results in 164 hits.

One can reasonably conclude from this that current thinking on the subject remains mostly confined to expert opinion. Of course, as the history books demonstrate time and again, “experts” are often incorrect. It is often said that half of what is taught in medical school is wrong, we just don’t know which half. For this reason, objective data is vital in helping to direct medicine and medical education down the best possible path.

In this vein, Dr. Papadakis’s article presents compelling evidence that professionalism matters, and that it matters *professionally*. In a pilot study published in 2004, Papadakis and colleagues found that disciplinary action against physicians by the Medical Board of California was associated with reported incidents of

unprofessional behavior during medical school [5]. Building on the troubling results of this pilot study, the authors collaborated with two other medical schools, the University of Michigan and Jefferson Medical College in Philadelphia, to explore this link more fully. Complete school records were available dating back to 1970, and medical board actions were reviewed between 1990 and 2003. These are a matter of public record. To control for confounding variables, each disciplined physician was paired with two control physicians, whose specialty matched that of the disciplined physician. Research assistants gathered the data, and entries reflecting unprofessional conduct were scored by several investigators to confirm interobserver agreement and thus reduce bias and other sources of observer-based error.

Based on this case-controlled, retrospective study, Papadakis and colleagues found the following. First, physicians who were disciplined by a medical board were three times more likely to have a record of unprofessional behavior during medical school than were the controls. In particular, they were more likely to have demonstrated

irresponsibility, diminished capacity for self-improvement, poor initiative, impaired relationships with students, residents and faculty, impaired relationships with nurses, and unprofessional behavior associated with being anxious, insecure, or nervous [6].

“Severe irresponsibility” was most strongly correlated, occurring 1.8 to 40 times more often, followed by “diminished capacity for self-improvement,” found 1.2 to 8.2 times as frequently. Interestingly, even MCAT scores appeared to be loosely linked with disciplinary behavior, with a trend towards lower test scores in physicians disciplined by the board. Furthermore, disciplined physicians were also twice as likely to have failed at least one course on their first attempt during medical school.

One must take care in interpreting these results, however. As a retrospective study, the most we can glean from the data is the knowledge that physicians disciplined by a medical board are significantly more likely to have documented evidence of unprofessional behavior in their medical school files. It is important to recognize that the stronger inverse inference *cannot* logically be made. In other words, one cannot assume that students who demonstrate unprofessional behavior during medical school are three times as likely to be disciplined by a medical board. To do so would amount to the commission of a logical fallacy known to philosophers as “converting a conditional,” [7] saying, “if A then B, therefore if B then A.” Of course, such an argument is fallacious.

Interestingly, the title of the original pilot study by Papadakis, “Unprofessional Behavior in Medical School is Associated with Subsequent Disciplinary Action by a State Medical Board,” seems to suggest this illogical inference in its phrasing, purporting a causative link between medical student behavior and subsequent disciplinary action, rather than the converse association, which is what the data actually supports. At most, one can only presume a vague degree of statistical risk

(1.15 to 4.02 times) of association between student behavior and subsequent discipline, based on the data. In fact, it may well be the case that a sizeable proportion of medical students exhibit unprofessional behavior at some point in their education, but do not go on to have professional difficulties and actions taken by their state medical board. Or, more likely, as I have found in my own experience, a great deal of unprofessional behavior goes unchecked and unrecorded in medical school files. While there *is* likely to be a group for which the relationship is true, we simply have no way of knowing how often this is actually the case without further study.

This shortcoming lies in the fact that the study is retrospective and is not a randomized controlled trial. In the absence of RCT data one cannot know whether a particular medical school intervention would make a difference in the likelihood of subsequent medical board discipline. Neither can one know, without an RCT, or at least a prospective cohort design, exactly how strong the correlation may be. That said, one might argue that an RCT would not even be ethical, in that it would pose the risk of leaving recognized unprofessional behavior unchecked, which stands to threaten patients' well-being if it continues thereafter. It would also be rather difficult to design such a study, which is infinitely complicated by requiring a human intervention rather than just a pharmaceutical one.

Although there are surely some shortcomings to this study, including its retrospective design and consequent inability to demonstrate a causal link between unprofessional student behavior and subsequent professional difficulties, the same is true for most studies, no matter how meticulous the design. In the case at hand, one must not miss the forest for the trees. Papadakis's data are truly groundbreaking and cannot be ignored. Clearly, professionalism is an important theme in modern medicine—indeed, unprofessional behavior was the basis for at least 74 percent of the medical board violations noted in this study—but there also seems to be a sense in which professionalism just *feels* important to physicians and educators, as manifested in its prominence in most curricula today [1].

As a recent graduate of medical school, I can certainly recall witnessing several instances of unprofessional behavior, and it always felt profoundly and intuitively disturbing. I imagine this is true for many physicians. One must wonder how patients will feel about and react to it, and how it might shape others' perceptions of physicians and of the medical profession in general. There is much at stake in these situations, thus it is truly troubling that such behavior can continue over several decades, as this study clearly demonstrates.

The authors conclude that professionalism should play a central role in medical education and that admissions and graduation criteria should reflect an explicit assessment thereof. They also argue that their data “supports the importance of identifying students who display unprofessional behavior” [6]. I wholeheartedly agree, despite the fact that it remains to be shown just how often unprofessional student behavior subsequently results in professional difficulties. Regardless,

professional behavior stands to have a significant impact on the patient-doctor relationship, and the persistence of unprofessional behavior over decades may be sufficient evidence to support such interventions. Countless interventions are currently under way at medical schools across the country. As Drs. Stern and Papadakis discuss in an article about the developing physician, professionalism is a topic that can clearly be taught and assessed within modern curricula and modeled by faculty [8]. Novel approaches continue to emerge, including an initiative to use the gross anatomy curriculum to teach and reinforce the tenets of professionalism [9]. Although untested objectively, such efforts are to be lauded as the best we have to date.

Professionalism is important to the future of medicine. It stands to define our interactions with patients, shape their perceptions of physicians and drive the overall success of medicine in society. As professionals, we “profess” certain ideals, the antitheses of which are the irresponsibility, diminished capacity for self-improvement, and poor initiative found in many students in this study. I believe we owe it to our patients, and to our profession and its reputation, to continually strive to maintain medicine’s historically noble professional ideology. Dr. Papadakis’s study lends more credit to this noble goal.

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