Educational Issues

Relationship Between Burnout and Professional Conduct and Attitudes Among US Medical Students

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To determine the relationship between measures of professionalism and burnout among US medical students, a cross-sectional survey of all medical students attending 7 US medical schools (overall response rate, 2682/4400 [61%]) was conducted in the spring of 2009. The survey included the Maslach Burnout Inventory (MBI), the PRIME-MD depression screening instrument, and the SF-8 quality of life (QOL) assessment tool, as well as items probing students' personal engagement in unprofessional conduct, understanding of appropriate relationships with industry, and attitudes regarding physicians' responsibility to society.

The main outcome measures were frequency of self-reported cheating/dishonest behaviors, understanding of appropriate relationships with industry as defined by American Medical Association policy, attitudes about physicians' responsibility to society, and the relationship of these dimensions of professionalism to burnout, symptoms of depression, and QOL. Of the students who responded to all the MBI items, 1354 (52.8%) of 2566 had burnout. Cheating/dishonest academic behaviors were rare (endorsed by <10%) in comparison to unprofessional conduct related to patient care (endorsed by up to 43%). Examples of the latter included reporting a physical examination finding as normal when it had been inadvertently omitted from the physical examination. Only 14% (362/2531) of students had opinions on relationships with industry consistent with guidelines for 6 scenarios. Students with burnout were more likely to report engaging in 1 or more unprofessional behaviors than those without burnout (35.0% vs 21.9%; odds ratio [OR], 1.89; 95% confidence interval [CI], 1.59–2.24). Students with burnout were also less apt to hold altruistic views regarding physicians' responsibility to society. For example, students with burnout were less likely to want to provide care for the medically underserved than those without burnout (79.3% vs 85.0%; OR, 0.68; 95% CI, 0.55–0.83). After multivariable analysis adjusting for personal and professional characteristics, burnout was the only aspect of distress independently associated with self-reported unprofessional conduct and less altruistic professional values among medical students at 7 US schools.

COMMENT

In this large, multi-institutional investigation involving a diverse spectrum of medical students, self-reported cheating and dishonest clinical behaviors identified a direct association with burnout, whereas altruistic professional values concerning physicians' responsibility to society demonstrated an inverse relationship with burnout. Burnout encompasses 3 domains: emotional exhaustion, depersonalization, and lack of personal accomplishment. The depersonalization component of burnout was also associated with the belief that it is acceptable to engage in relationships with industry that are inconsistent with the policy statement promulgated by the American Medical Association. In contradistinction, there were few relationships between depression or compromised mental/physical quality of life and dishonest clinical behaviors, attitudes toward industry, or altruistic professional values. These results are consistent with the theoretic framework[1] that burnout primarily affects the professional domain, whereas personal distress frequently has greater initial impact on personal domains, such as relationship problems or substance abuse. However, depending on chronicity and severity, personal distress can eventually have a secondary effect on professional behaviors as well.

The authors were forthright in acknowledging some of the limitations of their interesting study. They acknowledge that only a limited number of behaviors and attitudes were evaluated and that the study relied on self-reported rather than observed behavior. Hence, the results could represent a rather conservative estimate of the frequency of unprofessional behaviors. In addition, response bias is a possibility.

Although the study suggests associations between the factors assessed, it is unable to establish if these relationships are causal. Thus, it is possible that students who engage in unprofessional conduct are more apt to become burned out. The investigators underscore that a longitudinal study is necessary to produce a more definitive answer to issues of causation and directionality and also to determine how commonly unprofessional behaviors become recurrent behaviors rather than merely isolated lapses in judgment. Finally, future research should explore whether interventions developed to reduce burnout assist students in cultivating professional values and conduct.

Comment by Kathryn E. McGoldrick, MD

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Acquisition of Critical Intraoperative Event Management Skills in Novice Anesthesiology Residents by Using High-Fidelity Simulation-Based Training

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Novice residents in anesthesiology must acquire skills needed to respond to critical intraoperative events, but the infrequency of such events makes its difficult to assess clinical performance during early training. High-fidelity patient simulation is an increasingly widespread method of evaluating performance during critical situations. The effectiveness of this method was evaluated in a study of 21 novice residents presented with 3 hypoxemia and 3 hypotension scenarios.

During the 6-week study, residents were tested in all scenarios at baseline, then divided into 2 groups using a randomized crossover design. Group 1 received simulation-based training in hypoxemic events and group 2 in hypotensive events. After intermediate (3 weeks) testing in all scenarios, groups were switched to receive training in the other critical events. Each group had final testing at 6 weeks. Checklists were used by raters to score videotapes of the residents' performance. Composite scores on the scenarios were compared within and between groups.

The 2 study groups were similar at baseline assessment, and both had higher scores at the intermediate evaluation. At the final evaluation, scores related to the second training event had improved. Scores between groups were similar at week 6. Performance did not differ according to gender or type of internship experience. Residents who reported previous management of hypotension received better scores at baseline and final evaluations than residents without such experience, but self-reported experience with hypoxemia did not impact performance.

Simulation-based event-specific training of novice anesthesiology residents in the initial management of critical intraoperative events proved effective. Because simulation-based training is standard at the study institution, no control group without simulation exposure was available.

COMMENT

In the United Kingdom, anesthetic training is competency-based and involves the mastering of practical skills, accumulation of knowledge, and development of appropriate attitudinal and behavioral patterns. Although the examination diploma tests knowledge and skills as judged by senior colleagues, controversy surrounds how to thoroughly assess the acquisition of appropriate attitudes and behavior. The evidence base for the usefulness of simulators is small, although most clinicians acknowledge that simulation has an important role to play. Information obtained must be consistent and reproducible. One group of enthusiasts[1] looked at 4 categories: task management, team working, situational awareness, and decision making. They found that their anesthetists' nontechnical skills system had a satisfactory level of validity, reliability, and usability in an experimental setting. Another group from Oxford[2] reported on the development and evaluation of a method for measuring operating theatre teamwork quality. They developed a scale based on an aviation instrument for assessment of nontechnical skills and found that the NOTECHS (Oxford Non-Technical Skills) scale was a reliable and valid instrument.

In the current study, the authors took 21 novice anesthetists whom they trained during a 6-week period to manage 2 critical incidents (hypotension and hypoxemia), each developing during 3 different scenarios. They found that simulation-based training in the management of these critical incidents resulted in quicker acquisition of skills than would otherwise occur during everyday clinical activity. It certainly seems intuitive that the training of clinicians in the management of rare critical incidents in a controllable environment is extremely useful because the scenarios are reproducible, and no harm befalls real patients.

Comment by Craig R. Bailey, FRCA

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