

Wellness and Impairment Content in Schools of Medicine Curricula in the United States and Canada

Shannon B. Moss, PhD[†] Patrick O. Smith, PhD[§]

[†]Baylor Family Medicine Residency at Garland

[§]University of Mississippi Medical Center

Abstract - Medical students experience numerous stressors, ranging from academic demands to financial strain. These stressors contribute to medical students having a substantial incidence of psychological problems, substance abuse, and seeking of mental health treatment. Left untreated, these problems can result in dysfunctional habit development and subsequent professional impairment. Research has demonstrated the benefits of wellness-impairment educational programs in medical education, but it is unknown to what degree the topics of wellness and impairment are included in medical school curricula. To assess this, a 13-item survey instrument was sent to associate deans in 142 schools of allopathic medicine; 71 (50.0%) responded. The majority of respondents reported that physician impairment (95.8%) and wellness (77.5%) are addressed in their school of medicine curricula, although the degree to which these topics were included varied. Access to other health-promoting resources on campus was also assessed and is discussed. Results suggested that there is a disparity between primary and secondary prevention approaches on school of medicine campuses. Implications for curricula and directions for future research are discussed.

The incidence of psychological problems and substance abuse among physicians is remarkable. Intern physicians' depression rates range from 27% to 30%,¹ physician suicide rates are twice that of the general population,¹ and benzodiazepine and opiate analgesic misuse are more common among physicians.² One factor contributing to these findings is the stressful culture of medicine (e.g., high demands for perfectionism, competitiveness, sleep deprivation, and self-neglect).^{3,4} These characteristics can, along with financial worry common to medical students, result in elevated medical student distress levels.⁵⁻⁸ Numerous studies have examined rates of distress among medical students, with findings suggestive of psychological problems (e.g., anxiety, depression),⁹⁻¹³ elevated suicide rates,^{14,15} and substance abuse^{10,12,16} in this population.

Left untreated, the aforementioned problems (viz., depression, anxiety, substance abuse) can lead to impairment and even death in the case of suicide. Physician impairment, as defined by the AMA, refers to "any physical, mental or behavioral disorder that interferes with ability to engage safely in professional activities".¹⁷ The AMA estimates that 15% of physicians will become impaired at some point during their career.¹⁸ One potential means of primary impairment prevention includes wellness and impairment education in medical training.^{1,19} In contrast to secondary and tertiary prevention that focus on early detection and prevention of recurrence respectively, primary prevention's focus is to prevent the occurrence of impairment. Training in wellness (i.e., engaging in behaviors to achieve and maintain

physical, mental and emotional health²⁰) may further this goal. Although no research to date has investigated the effectiveness of wellness intervention programs in preventing future impairment, medical students who experience such programs report benefits.^{3,12,21-24} However, the provision of such programs is not systematically applied in the majority of schools of medicine. For example, a 2001 study indicated that the number of health promotion and wellness programs offered in schools of medicine significantly declined between 1988 and 1997, with only 20.0% of 158 allopathic and osteopathic schools of medicine offering such programs in 1997.²⁵

The AMA recommends that physician primary and secondary impairment prevention be taught and available to medical students through schools of medicine such that each school should "develop and maintain impairment prevention and treatment programs with confidential services".^{26,27} However, in spite of the benefits of such programs, schools of medicine are not required to implement these AMA recommendations. Similarly, though the Liaison Committee on Medical Education (LCME) requires secondary preventive services (e.g., personal counseling) be available to students, it does not require that curriculum time be devoted to impairment and wellness for accreditation.²⁸ Interestingly, the Accreditation Council for Graduate Medical Education does require that both primary and secondary impairment prevention strategies be in place during residency education.²⁹

Given the stressors of medical education, the rates of medical student distress, and the benefits of physician wellness educational programs, it seems important to determine if schools of medicine are following the AMA recommendations regarding primary prevention of physician impairment, an earlier preventive step than the more secondary prevention approach required by the LCME. Although four earlier studies assessed the presence of structured wellness program components (e.g., support groups) and the topics covered (e.g., financial planning, time management), schools' curricular integration of

wellness and impairment topics has not been explored.³⁰⁻³³ Thus, the purpose of this study was to survey U.S. and Canadian medical schools to determine if and the extent to which physician wellness and impairment educational strategies are included in their curricula.

Method

The 13-item survey instrument developed for use in this study was designed to assess the degree to which impairment and wellness topics are included in

Table 1. Impairment and wellness curricular content in schools of medicine

	Physician Impairment		Physician Wellness	
	%	N	%	N
Topic is addressed in the curriculum	95.8	68	77.5	55
Amount of curriculum time devoted to topic				
A great deal (addressed in several classes and in seminars/lectures and rounds)	4.4	3	3.6	2
A lot (a class and/or consistently addressed in seminars or rounds)	23.5	16	21.8	12
Some (no classes; several lectures, seminars, or rounds)	44.1	30	43.6	24
A little (no classes; occasional lectures, seminars, or rounds)	26.5	18	29.1	16
Format in which topic is presented				
One component of an academic course	64.7	44	58.2	32
Academic course unto itself	17.6	12	18.2	10
Single, stand-alone lecture	14.7	10	16.4	9
Stand-alone lecture series	5.9	4	12.7	7
Online website	2.9	2	7.3	4
When topic is presented				
Orientation	32.4	22	56.4	31
Year 1 of medical school	79.4	54	83.6	46
Year 2 of medical school	61.8	42	74.5	41
Year 3 of medical school	50	34	63.6	35
Year 4 of medical school	19.1	13	34.5	19

Table 2. Health-promoting resources offered by schools of medicine

	%	N
Counseling services	100	71
On campus counseling center	85.9	61
Off-campus contractual services	50.7	36
Component of on-campus employee health services	31.0	22
Medical student support groups	52.1	37
Academic assistance	97.2	69
Fitness facilities	94.4	67
Healthy food choices	94.4	67
Tobacco-free campus	70.4	50
Alcohol-free campus	87.3	62

schools of medicine curricula. Question content was modeled after a similar, prior survey developed by Wolf and colleagues;²⁹ however, the previous survey did not assess wellness and impairment separately and did not assess them in the context of medical schools' curricula. Therefore, questions were modified and added to assess the degree to which these components are integrated into the curriculum, the amount of curricular time devoted to these components, and when in the curriculum these components are available to medical students. Survey items were piloted with faculty at the authors' institution for clarity and readability.

A list of the associate deans of 142 schools of allopathic and osteopathic medicine in the United States and Canada was obtained from the LCME. Only schools accredited by the LCME were sampled for this study. Data was collected January through March of 2005.

An electronic mail message including information about the study and a hyperlink to the web-based survey was sent to the associate deans requesting their participation. The survey took approximately five minutes to complete, and responses were anonymous. Two electronic mail messages were sent after the initial mailing requesting that those who did not initially complete the survey visit the website and do so, resulting in a three-month period of data collection. Approval for this study was granted by the Institutional Review Board of the authors' institution, a publicly-funded medical school in the Southern United States.

Data were analyzed using frequency analyses, as the primary objective of the study was to determine the percentage of respondents endorsing survey items. Further, as the intent of this study was to gather general information about impairment and wellness curricular content, no descriptive information (e.g., geographic location, allopathic versus osteopathic) was gathered from the respondents. It was not possible to compare respondents and non-respondents, as responses were anonymous upon execution of the survey hyperlink.

Results

Of the 142 associate deans surveyed, 71 responded (50.0% response rate). Responses are presented in each of the major areas surveyed, including physician impairment, physician wellness, and health-promoting resources available on campus. Results are summarized in Tables 1 and 2. On some items, respondents were instructed to "check all that apply"; as a result, some percentage totals exceed 100%.

Physician Impairment - Although 4.2% of respondents reported that their school's curriculum did not include physician impairment, all reported plans to include it in the future. Of respondents, 95.8% reported that physician impairment was addressed in their school of medicine curricula. When asked to identify the amount of curriculum time devoted to physician impairment, 4.4% reported devoting "a great deal" of time (e.g., addressed in several classes and in seminars/lectures and in rounds, and/or given formal reading assignments and/or quizzes), 23.5% reported devoting "a lot" of time (e.g., a class and/or consistently addressed in seminars or rounds), 44.1% reported devoting "some" time (e.g., no classes; several lectures, seminars, or rounds), and 26.5% reported devoting "a little" time (e.g., no classes, occasional lectures, seminars, or rounds). One dean did not respond to this item (1.5%). Most often, physician impairment was presented as one component of an academic course (64.7%). Courses commonly identified included human behavior/behavioral science, clinical medicine, and medicine and society. Respondents also reported presenting physician impairment as an academic course unto itself (17.6%), as a single, stand-alone lecture (14.7%), as a stand-alone lecture series (5.9%), and on an online website (2.9%).

When asked to identify when physician impairment was presented, the majority (79.4%) reported presenting it during medical school year one, followed by medical school year two (61.8%), medical school year three (50.0%), orientation (32.4%), and medical school year four (19.1%). Topics presented as part of the physician impairment curriculum included substance abuse (97.1%), mental illness/personality disorders (73.5%), physical impairment (57.4%), suicide (57.4%), disruptive behavior (54.4%), and cognitive declines (38.2%). Other topics respondents identified, though infrequently, included relationship stress, sleep disorders, eating disorders, and attention deficit hyperactivity disorder.

Physician Wellness - Of those responding, 20.83% reporting not including wellness in their curriculum; 1.4% did not respond to this item. Among those without a physician wellness component, 40.0% planned to include it in the future, whereas 53.3% had no plans. The majority of respondents (77.5%) reported that physician wellness was included in their curriculum. The amount of curriculum time devoted to physician wellness was as follows: 3.6% reported devoting "a great deal" of time (e.g., addressed in several classes and in seminars/lectures and in rounds, and/or given formal reading assignments and/or quizzes), 21.8% devoted "a lot" of time (e.g., a class and/or consistently addressed in seminars or rounds), 43.6% devoted "some" time (e.g., no classes,

several lectures, seminars, or rounds), and 29.1% devoted “a little” time (e.g., no classes, occasional lectures, seminars, or rounds); one dean did not respond to this item (1.8%). As with physician impairment, physician wellness was most often presented as a component of an academic course (58.2%) with frequently cited courses including human behavior/behavioral science, clinical medicine, and medicine and society. Respondents also presented physician wellness as an academic course unto itself (18.2%), as a single, stand-alone lecture (16.4%), as a single, stand-alone lecture series (12.7%), and on an online website (7.3%).

Physician wellness was most often presented during medical school year one (83.6%), followed by medical school year two (74.5%), medical school year three (63.6%), orientation (56.4%), and medical school year four (34.5%). Physician wellness topics presented included physician/patient communication skills (89.1%), coping skills (81.8%), fitness/exercise (81.8%), nutrition (69.1%), social support (69.1%), relaxation (69.1%), mental health treatment (65.5%), sleep hygiene (60%), spirituality (52.7%), and conflict resolution skills (43.6%). Other topics identified by programs, though infrequently, included behavior change, stress management, and relationships.

Health-Promoting Resources - Counseling services. Of the 70 deans responding to this item, 100% reported that counseling services were available to their medical students; one dean did not respond to this item. Most often, counseling services were offered through an on-campus counseling center (85.9%), followed by off-campus contractual counseling services (50.7%) and as a component of on-campus employee health services (31.0%). The majority of the counseling services offered (90.0%) were free of charge for medical students. Most respondents (52.1%) reported medical student support groups were part of their curriculum. Many also offered academic assistance programs for their students (97.2%).

Healthy lifestyle promotion. Most respondents (94.4%) reported having fitness facilities available to their medical students, with the majority being free of charge to students (65.7%). Most reported healthy food choices being available on campus (94.4%), describe their campus as tobacco-free (70.4%), and denied that alcohol was sold on campus (87.3%).

Opinion of Curriculum Guidelines - When asked, “Do you think that the LCME should require medical student wellness and impairment content as a component of the curriculum?,” 56.3% said “yes”, 42.3% said “no”, and 1.4% did not respond. Of those responding “no”,

the majority already offered impairment (96.7%) and wellness (73.3%) content as part of their curricula.

Discussion

Overall, these results demonstrate that the majority of respondents include wellness and impairment content in their curricula. Despite these findings, there is a disparity between primary and secondary approaches to impairment in schools of medicine, with greater focus on managing impairment problems after their development rather than preventing their occurrence. Research to date has unfortunately not addressed the effectiveness of primary prevention with regard to physician impairment. Despite this, research has demonstrated the positive effects of wellness education on medical students’ coping strategies, sleep, physical activity,¹² stress,²³ depression and anxiety, among others.^{3,21,24,33} However, the presence of wellness education alone does not guarantee benefit. For example, this study found that when wellness-promoting resources were available on campus, they were not always affordable for students. One respondent reported, “While our school offers healthy food, most of our students are not able to afford it.” Given the high rates of financial stress among medical students,^{5,8,34} it seems clear that wellness resources must be affordable for medical students to reap their benefits.

Cost may also prevent schools from offering wellness resources. This study did not assess barriers to including wellness in medical schools’ curricula; however, one would presume that both lack of time and funding would be contributors. Future research assessing barriers and comparing wellness interventions’ effectiveness and cost-effectiveness in the medical school setting are necessary. This would allow schools to make an informed decision about the wellness resources they choose to provide for students and may be more palatable than requiring wellness content for accreditation, which does not necessarily ensure compliance.³⁵

The inclusion of wellness content would also be buoyed by research on the preventive benefits of wellness education with regard to future impairment. Further, it would be interesting to examine if wellness education is differentially effective depending on when it is presented in the curriculum. This should be examined not only in the context of medical school but also with regard to wellness practices in residency and beyond, particularly given the high rates of stress and reduced wellness behaviors among medical residents.^{29,36}

Although these results are intriguing, there are various limitations of survey research in general and also

particular inferential constraints specific to this study. First, although schools of medicine may report the inclusion of wellness and impairment topics and resources, this may not reflect the degree to which students actually take advantage of these resources. Further, respondents who indicated that wellness and impairment are not included in their curricula may not have been familiar with the breadth of topics constituting each or the degree to which their individual faculty may include these topics in their teaching. Therefore, the extent to which these topics are included may be underestimated. Finally, the response rate of 50% is not ideal, raising concerns of response bias and limiting the generalizability of the findings. Despite these limitations, these findings offer some insight into the inclusion of these topics and may provide an impetus for greater inclusion of wellness content in schools of medicine.

References

1. Miller MN, McGowen KR. The painful truth: physicians are not invincible. *South Med J*. 2000;93:966-73.
2. Hughes PH, Brandenburg N, Baldwin DC, Storr CL, Williams KM, Anthony JC, Sheehan DV. Prevalence of substance use among US physicians. *JAMA*. 1992;267:2333-9.
3. Lee J, Graham AV. Students' perception of medical school stress and their evaluation of a wellness elective. *Med Educ*. 2001;35:652-9.
4. Moffat KJ, McConnachie A, Ross S, Morrison JM. First year medical student stress and coping in a problem-based learning medical curriculum. *Med Educ*. 2004;38:482-91.
5. Ross S, Cleland J, Macleod MJ. Stress, debt and undergraduate medical student performance. *Med Educ*. 2006;40:584-9.
6. Peterson DF, Smith CM, Degenhardt BF. Sources of stress in entering osteopathic medical students [abstract no. C18]. *J Am Osteopath Assoc*. 1998;98: 396.
7. Stewart SM, Betson C, Lam TH, Marshall IB, Lee PW, Wong CM. Predicting stress in first year medical students: a longitudinal study. *Med Educ*. 1997;31:163-8.
8. Jolly P. Medical school tuition and young physician indebtedness [monograph on the Internet]. Washington, DC: American Association of Medical Colleges; 2004 [cited 2004 Oct 29]. Available from: <http://www.webcitation.org/5MqZBY1bj>
9. Givens JL, Tjia J. Depressed medical students' use of mental health services and barriers to use. *Acad Med*. 2002;77:918-21.
10. Roberts LW, Warner TD, Lyketsos C, Frank E, Ganzini L, Carter D. Perception of academic vulnerability association with personal illness: a study of 1,027 students at 9 medical schools. Collaborative Research Group on Medical Student Health. *Compr Psychiatry*. 2001;42:1-15.
11. Raj SR, Simpson CS, Hopman WM, Singer MA. Health-related quality of life among final-year medical students. *CMAJ*. 2000;162:509-10.
12. Ball S, Bax A. Self-care in medical education: effectiveness of health-habits interventions for first-year medical students. *Acad Med*. 2002;77:911-7.
13. Park CL, Adler NE. Coping style as a predictor of health and well-being across the first year of medical school. *Health Psychol*. 2003;22:627-31.
14. Hays LR, Cheever T, Patel P. Medical student suicide, 1989-1994. *Am J Psychiatry*. 1996;153:553-5.
15. Tyssen R, Vaglum P, Gronvold NT, Ekeberg O. Suicidal ideation among medical students and young physicians: a nationwide and prospective study of prevalence and predictors. *J Affect Disord*. 2001;64:69-79.
16. Baldwin DC Jr, Hughes PH, Conrad SE, Storr CL, Sheehan DV. Substance use among senior medical students. A survey of 23 medical schools. *JAMA*. 1991;265:2074-8.
17. American Medical Association [homepage on the Internet]. H-95.955 Substance abuse among physicians. Chicago: The Association; c1995-2007 [cited 2006 Feb 27] [about 1 screen]. Available from: <http://www.webcitation.org/5MqZffxtO>
18. AMA Council on Mental Health. The sick physician: Impairment by psychiatric disorders,

- including alcoholism and drug dependence. *JAMA* 1973;223:684-7.
19. Skorupa J, Agresti AA. Ethical beliefs about burnout and continued professional practice. *Prof Psychol Res Pr.* 1993;24:281-5.
 20. The American Heritage Stedman's Medical Dictionary [dictionary on the Internet]. 2nd ed. Boston: Houghton Mifflin Company; 2004. wellness; The Free Dictionary by Farlex [cited 2006 Dec 7]. Available from: <http://medical-dictionary.thefreedictionary.com/wellness>
 21. Rosenzweig S, Reibel DK, Greeson JM, Brainard GC, Hojat M. Mindfulness-based stress reduction lowers psychological distress in medical students. *Teach Learn Med.* 2003;15: 88-92.
 22. Cameron D, Katch E, Anderson P, Furlong M. Healthy doctors, healthy communities. *J Ambul Care Manage.* 2004;27:328-38.
 23. Broquet KE, Rockey PH. Teaching residents and program directors about physician impairment. *Acad Psychiatry.* 2004;28:221-5.
 24. Shapiro SL, Shapiro DE, Schwartz GE. Stress management in medical education: a review of the literature. *Acad Med.* 2000;75:748-59.
 25. Cox CC, Cambre KM, Wolf TM, Webster MG, Hooper J. Trends in the number and administrative characteristics of medical school health promotion programmes. *Med Educ.* 2001;35:173-4.
 26. Hooper J, Cox CC, Cambre K, Wilburn D, Webster M, Wolf T. Comparison of the scope of allopathic and osteopathic medical school health promotion programs for students. *Am J Health Promot.* 1999;13:171-9.
 27. Wolf TM, Faucett JM, Randall HM, Schmidt LP. A survey of health promotion programs in U.S. and Canadian medical schools. *Am J Health Promot.* 1990;4:396.
 28. Wolf TM, Randall HM, Faucett JM. A survey of health promotion programs in U.S. and Canadian medical schools. *Am J Health Promot.* 1988;3:33-6.
 29. Wolf TM, Scurria PL. A survey of health promotion programs in U.S. and Canadian medical schools. *Am J Health Promot.* 1995;10:89-91.
 30. American Medical Association [homepage on the Internet]. H-295.992 Medical student education concerning physician impairment. Chicago: The Association; c1995-2007 [cited 2004 Oct 18] [about 1 screen]. Available from: <http://www.webcitation.org/5MqayDvmi>
 31. American Medical Association [homepage on the Internet]. H 95.982 Substance abuse in medical schools. Chicago: The Association; c1995-2007 [cited 2004 Oct 18] [about 1 screen]. Available from: <http://www.webcitation.org/5MqbDJuN5>
 32. Liaison Committee on Medical Education [monograph on the Internet]. Functions and structure of a medical school: standards for accreditation of medical education programs leading to a M.D. degree. Washington D.C.: Liaison Committee on Medical Education; c2004 [cited 2004 Sep 15]. Available from <http://www.webcitation.org/5MqbIVRCo>
 33. Accreditation Council for Graduate Medical Education. Institutional requirements. Chicago: Accreditation Council for Graduate Medical Education; c1995-2007 [updated 2003 Jul 1; cited 2006 Feb 27]. Available from: <http://www.webcitation.org/5Mqc6ujOE>
 34. Collier VU, McCue JD, Markus A, Smith L. Stress in medical residency: status quo after a decade of reform? *Ann Intern Med.* 2002;136:384-90.
 35. Pugno PA, Epperly TD. Residency Review Committee for Family Medicine: an analysis of program citations. *Fam Med.* 2005;37:174-7.
 36. Perry MY, Osborne WE. Health and wellness in residents who matriculate into physician training programs. *Am J Obstet Gynecol.* 2003;189:679-83.

Correspondence

Shannon B. Moss, Ph.D.
Director of Behavioral Medicine
Baylor Family Medicine Residency at Garland
601 Clara Barton Blvd, Ste. 340
Garland, TX 75042
(972) 272-5935
ShannoMo@BaylorHealth.edu