

# Medical Student Wellness in Wisconsin: Current Trends and Future Directions

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## ABSTRACT

**Introduction:** The goal of this study is to describe the state of mental health of Wisconsin medical students.

**Methods:** Online wellness surveys were distributed to students at the University of Wisconsin School of Medicine and Public Health (UWSMPH) and Medical College of Wisconsin (MCW) during the 2016-2017 school year.

**Results:** Of UWSMPH respondents, 40.0% and 12.5% reported experiencing depression/other mood changes and suicidal ideation during medical school, respectively. Twelve percent of MCW respondents screened positive for depression using the Patient Health Questionnaire-2, and 7.8% reported experiencing suicidal ideation in the last 2 weeks.

**Discussion:** Similar to results shown worldwide, Wisconsin medical students experience diminished mental health relative to nonmedical peers. Changes in medical education are needed to improve student mental well-being.

## BACKGROUND

Medical students experience lower mental quality of life,<sup>1</sup> and higher rates of depression<sup>1,2</sup> and suicidal ideation<sup>2</sup> relative to similarly aged nonmedical peers. Nationally, the 12-month prevalence of a major depressive episode and serious suicidal ideation reported in 2016 were 10.9% and 8.8% for 18 to 25 year olds and 7.4% and 4.2% for 26 to 49 year olds, respectively.<sup>3</sup> A recent meta-analysis reported a depression rate of 27.2% and an alarming 11.1% prevalence of suicidal ideation among medical students.<sup>2</sup> Burnout rates are also significantly higher among medical students than the general population, and studies suggest that this may be the origin of future physician burnout.<sup>1</sup> High rates of depression, suicide, and burnout also have been reported among residents and physicians.<sup>1,4</sup>

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In addition to adverse effects on academic performance,<sup>5</sup> the consequences of poor mental health and burnout among medical students may extend into patient care. Medical student psychological distress has been associated with unprofessional behaviors and decreased empathy.<sup>5</sup> These changes may have long-term effects as students continue in training. Decreased empathy and burnout among residents and physicians have been correlated with increased rates of medical errors and lower quality care.<sup>6,7</sup>

Although there is growing literature on medical student wellness at the national and international levels,<sup>1,2,5</sup> data at the state level

is lacking. The purpose of this research is to assess medical student mental health and wellness at Wisconsin's 2 medical schools, the University of Wisconsin School of Medicine and Public Health (UWSMPH) and the Medical College of Wisconsin (MCW). This study serves as a collaborative effort to educate Wisconsin's medical community on the well-being of its medical students.

## METHODS

### Overall Design

This study is a retrospective review of a subset of deidentified data previously collected from the 2016-2017 UWSMPH and MCW wellness surveys. The surveys were one-time, voluntary questionnaires designed to assess current medical student wellness and determine specific areas for improvement. At both institutions, medical students were sent emails via the school's electronic mailing list inviting them to complete a web-based survey. All responses were confidential and anonymous. No incentives were offered for participation, and there was no follow-up contact made with nonparticipants. For study data analysis, frequency and relative frequency distributions were calculated for multiple choice questions, and thematic analysis was performed on free text responses.

**Table.** Demographic Characteristics of 2016-2017 Survey Respondents at University of Wisconsin School of Medicine and Public Health (UWSMPH) and the Medical College of Wisconsin (MCW)

	Respondents, n (%)	
	UWSMPH (n=255)	MCW (n=405)
Year in medical school		
1st	97 (38.0%)	143 (35.3%)
2nd	94 (36.9%)	109 (26.9%)
3rd	33 (12.9%)	75 (18.5%)
4th	27 (10.6%)	64 (15.8%)
Other <sup>a</sup>	4 (1.6%)	0
Missing	0	14 (3.5%)
Gender identity		
Male	99 (38.8%)	187 (46.2%)
Female	155 (60.8%)	203 (50.1%)
Other <sup>b</sup> /missing	1 (0.4%)	15 (3.7%)
Residency status		Not Assessed
In-state (Wisconsin resident)	193 (75.7%)	
Out-of-state (not Wisconsin resident)	62 (24.3%)	
Campus location	Not Assessed	
Milwaukee campus		346 (85.4%)
Regional campus <sup>c</sup>		46 (11.4%)
Missing		13 (3.2%)

<sup>a</sup> Students who took a leave of absence from medical school to pursue research projects, graduate studies, etc.

<sup>b</sup> Students who are gender non-conforming.

<sup>c</sup> Includes MCW-Green Bay and MCW-Central Wisconsin.

### UWSMPH

After review by the UW-Madison Institutional Review Board (IRB), this study was deemed minimal risk and qualified for exemption from further IRB oversight. UWSMPH survey questions were written by the medical student wellness committee and school administration. Seven hundred medical students were invited to complete the survey, including those at statewide clinical sites and those pursuing additional degrees or research. Students accessed the survey through an anonymous link, and responses were collected between December 2016 and January 2017. Data was stored in a password-protected online database.

Eight questions from the survey were reviewed for this study. They included standard multiple choice, Likert-type scale multiple choice, 1 “check all that apply,” and 1 free response. Students were screened for depressive symptoms and anxiety attributable to medical school as well as suicidal ideation during medical school via self-report. Students were asked to choose their greatest stressors in medical school from a list of possible answers, and also about their utilization of wellness resources, including mental health services.

### MCW

This study was approved by the MCW IRB as a Registration Project for nonfederally funded and non-FDA regulated research whose activities fall into the minimal risk category. Over nine

hundred medical students across MCW’s 3 campuses were invited to participate in the wellness survey. Responses were collected throughout February 2017 using the SPSS Data Collection Interviewer and immediately deidentified by MCW’s Office of Measurement and Evaluation.

Ten questions from the survey were analyzed for this study, and their format included multiple choice on a Likert-type scale, “check all that apply,” and 1 free response. Depression and suicidal ideation screening were performed using the well-validated Patient Health Questionnaire-2 (PHQ-2) and item 9 from the PHQ-9, respectively.<sup>10</sup> Data from the questions using the PHQ-2 were added together, using a cut-off point of 3 to indicate a positive screen for depression.<sup>10</sup> Finally, participants were asked about their utilization of mental health services.

### RESULTS UWSMPH

The Table shows demographic characteristics of survey respondents at both schools. The UWSMPH survey response rate was 36.4% (255/700). Fifty-six percent (144/255) of respondents indicated that medical school has had a negative impact on their mental health. Specifically, 65.1% (166/255) and 40.0% (102/255) reported experiencing anxiety and depression/other mood changes attributable to medical school, respectively. Among respondents, 12.5% (32/255) endorsed experiencing suicidal ideation during medical school. The 3 most commonly chosen responses for the greatest stressors in medical school were “general lack of time” (78.8%, 201/255), “volume of academic material” (69.4%, 177/255), and “lack of time for self-care” (66.7%, 170/255). Fifty-eight percent (147/255) of respondents reported very rarely or never using available wellness resources, including mental health services. In free text responses, survey participants described lack of time and limited access as reasons for not using such resources.

### MCW

The MCW survey response rate was 44.3% (405/915). Each question was optional and respondents were able to choose not to answer questions. Twenty-nine percent (112/381) of respondents reported experiencing a mental health condition while in medical school. Among the individuals who completed the survey, 12.0% (46/384) screened positive for depression in the last 2 weeks using the PHQ-2. Prevalence of suicidal ideation in the last 2 weeks was 7.8% (30/384). The rate of reported utilization of mental health services among respondents was 28.6% (110/384). Forty-three percent (164/382) felt the need to utilize mental health services but did not pursue them. The most prevalent reasons given for not pursuing mental health services were limited free time from school (87.8%, 144/164), fear of stigma (34.1%, 56/164), perceived difficulty accessing services (31.7%, 52/164), and fear of counseling records appearing on the academic record (31.1%, 51/164).

## DISCUSSION

This is the first report to describe the mental well-being of medical students in Wisconsin. Our research utilizing wellness surveys at UWSMPH and MCW demonstrates that Wisconsin medical students experience depression and suicidal ideation at rates greater than those reported in the general population but similar to rates found among medical students more broadly.<sup>2,3</sup> Wisconsin medical students reported an overall negative effect of medical school on their mental health, which aligns with results from previous studies.<sup>1,2,5</sup> Additionally, our survey data reveals that many students do not utilize available mental health services due to lack of time, limited access, and concerns over confidentiality and stigma. This is consistent with other studies that have reported low rates of mental health service utilization by depressed medical students.<sup>9</sup>

This study has several limitations. First, direct comparison of the data from UWSMPH and MCW is limited due to the use of different survey tools at each institution, specifically the methods used for depression and suicidal ideation screening. Interpretation of UWSMPH data is further restricted due to the use of an internally developed survey rather than validated metrics. The answer choice “depression or other mood changes” used for self-reported depression screening at UWSMPH likely led to overestimation of depressive symptoms. In addition, although similar to other medical student survey studies,<sup>1</sup> our survey response rates were fairly low. Voluntary participation may have resulted in selection bias, as distressed medical students may have been more likely to complete the survey. Given that our results were collected during the winter months, seasonal changes in mood may have resulted in increased reporting of depressive symptoms. Finally, respondents at both schools were more likely to be in their pre-clinical years, indicating that results may not adequately represent the mental health of third- and fourth-year students.

This study serves as a foundation for future research on Wisconsin medical student wellness. Efforts are underway to improve the wellness surveys at both institutions and make the results more directly comparable through increased use of validated metrics. Future surveys will include the well-studied PHQ-2, Generalized Anxiety Disorder scale (GAD-2), and questions from the PHQ-9.<sup>8,10</sup> Questions to screen for burnout will be added as an additional marker of medical student wellness. Additionally, we are working to increase survey response rates, particularly among third- and fourth-year students and at regional campuses/clinical sites. Sub-analysis of the survey data by year in medical school, race/ethnicity, and campus site should be studied in order to assess the association between specific variables and differences in medical student well-being. Finally, evaluation of the impact of wellness programming implemented at both schools is another important area for future research.

Our state-level data add to the growing literature<sup>1,2,5</sup> indicating that medical students experience diminished mental health

compared to age-matched, nonmedical peers. UWSMPH and MCW, along with many other medical schools around the country, are making significant changes in order to create an environment that fosters student well-being and resiliency in addition to learning. The culture of medicine needs to shift and embrace the humanity of its trainees, viewing education about self-care as essential to optimal patient care. This shift will enhance not only the medical education experience, but also foster successful transitions to residency and clinical practice, with patients being the ultimate beneficiaries.

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