Massachusetts Medical Students Feel Unprepared to Treat Patients with Substance Use Disorder

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J Gen Intern Med 33(3):249–50
DOI: 10.1007/s11606-017-4192-x

INTRODUCTION

Drug overdose, driven largely by prescription opioids and heroin, is the leading cause of injury deaths in the United States.[1] In Massachusetts, an estimated 2069 opioid-related deaths occurred in 2016, with the number projected to rise in 2017.[2] In response to the opioid crisis, Massachusetts Governor Charles Baker convened a medical education working group and implemented medical education curriculum reform related to substance use disorder (SUD) in 2016. It is therefore important to develop a baseline understanding of undergraduate medical education on substance use. This knowledge will be critical in assessing the need for and impact of medical education initiatives in addiction medicine.

METHODS

After review of the literature, we designed the survey instrument to evaluate medical students' attitudes towards and preparedness for treating patients with SUD. Survey responses were recorded on a four-point Likert scale constructed to minimize social desirability bias. The Harvard Medical School Institutional Review Board (IRB) approved IRB exemption for the survey, which was distributed through email to medical students at Boston University, Harvard University, Tufts University, and the University of Massachusetts from May 1, 2016, to June 8, 2016.

We calculated descriptive statistics in terms of the number of respondents who reported that they "strongly agreed" or felt "very prepared" to treat patients with SUD. We stratified responses by school and tested for significance with ANOVA to assess differences in training statewide. Logistic regression was used to evaluate predictors of self-reported adequate training in addiction medicine, which was defined by respondents who "strongly agreed" they had been prepared to care for patients with SUD. Data analysis was performed with STATA version 14 software (StataCorp LP, College Station, TX).

Published online September 25, 2017

RESULTS

Six hundred thirty-five medical students responded to the statewide survey on addiction medicine, yielding a response rate of 23.5%. There were no significant differences in response rates among medical schools. Results for the statewide survey are reported in Table 1. Logistic regression was used to evaluate predictors for self-reported adequate training in addiction medicine (Table 2).

DISCUSSION

This statewide study of medical students evaluated the current state of medical training in addiction medicine in Massachusetts, a state where more than five individuals die each day from opioid overdose.[5] To our knowledge, it is the first statewide survey of medical student preparedness in addiction medicine. Strengths of the study include its multi-center design, overall number of respondents, and diversity in age, gender, and intended specialty among medical students. Limitations include the potential for respondent bias and a relatively low response rate of 23.5%.

We found overwhelmingly positive attitudes towards patients with SUD, as 90.7% of respondents "strongly agreed" that it is important to know how to treat SUD as a physician. However, only 13.6% "strongly agreed" that they had been adequately trained in addiction medicine, and few felt "very prepared" to use the evidence-based Screening, Brief Intervention, and Referral (SBIRT) method.[3] Surprisingly, a mere 15.9% of fourth-year medical students "strongly agreed" that they had been adequately trained to care for patients with SUD.

Although the majority of medical students in Massachusetts felt inadequately trained, there were statistically significant differences in preparedness based on medical school affiliation. These differences may be explained in part by the differences in both preclinical and clinical training across the state, as predictors of self-reported adequate training include at least

Table 1 Survey Results in Terms of Percentage of Medical Student Respondents Who Strongly Agree or Feel Very Prepared

	School 1	School 2	School 3	School 4	Mean (*p*-value)
Attitudes					
A substance use disorder is a treatable illness.	61.8%	73.2%	60.7%	63.1%	64.73% (0.068)
Using medications like buprenorphine (Suboxone) for opioid use disorder is simply replacing one addiction with another.	0%	0%	0.6%	0%	0.31% (< 0.001)*
As a physician, it is important that I know how to treat substance use disorders.	91.3%	90.1%	89.8%	94.6%	90.7% (0.6328)
Patients with substance use disorders are more challenging to care for than the average patient.	36.8%	34.8%	43.1%	33.3%	37.4% (0.2729)
Preparedness					
Manage patients with chronic pain	1.6%	0%	1.2%	1.8%	1.1% (< 0.001)*
Counsel patients about the addictive potential of prescribed opioids	18.3%	5.0%	23.2%	31.5%	18.4% (< 0.001)*
Screen patients for opioid use disorder	16.7%	6.1%	16.1%	15.3%	13.3% (< 0.001)*
Provide a brief intervention for a patient with an opioid use disorder	9.1%	3.0%	11.3%	8.2%	7.9% (< 0.001)*
Refer a patient with an opioid use disorder for treatment	17.7%	14.2%	29.2%	13.5%	19.2% (< 0.001)*
Counsel patients about pharmacologic treatment options for opioid use disorder	13.4%	9.2%	19.2%	15.3%	14.2% (< 0.001)*
Counsel patients about behavioral treatment options for opioid use disorder	5.4%	3.1%	13.9%	7.2%	7.2% (< 0.001)*
Medical school experience					
At my medical school, I have found faculty mentors in addiction medicine.	43.6%	20.3%	39.9%	41.4%	36.3% (< 0.001)*
At my medical school, faculty members frequently teach about substance use disorders.	28.8%	8.0%	41.0%	24.6%	26% (< 0.001)*
At my medical school, I have been adequately trained to care for patients with substance use disorders.	14.7%	3.1%	19.9%	17.1%	13.6% (< 0.001)*

**Indicates statistical significance*

1 year of clinical training (OR: 2.50, $p = 0.003$), access to faculty mentors in addiction medicine (OR: 2.61, $p < 0.001$), and exposure to faculty who frequently teach about SUD (OR: 5.79, $p < 0.001$).

This study demonstrates a need for improvement in medical school training in addiction medicine. Unfortunately, the average medical school devotes only 12 hours of curricular time to substance use disorder education,[4] and 20% of medical students at 15 medical schools reported no training in addiction medicine at all.[5] As students graduate from medical school and advance in their training, perceived preparedness and willingness to treat SUD only decrease.[6]

There is therefore a need for more lecture time dedicated to SUD training, greater clinical exposure to patients with SUD, and faculty mentors in addiction medicine who can serve as role models. Future studies should evaluate nationwide undergraduate medical training in addiction medicine and guide the standardization of SUD education in order to improve access to addiction treatment services across the United States.

Table 2 Logistic Regression Model to Determine Predictors of Medical Student Respondent Preparedness for Treating Patients with Substance Use Disorders

Variable	Odds ratio	*p*-value
Age	1.01	0.840
Gender	1.14	0.655
School	1.19	0.179
Clinical training	2.50	0.003*
Belief that substance use disorders are treatable illnesses	1.01	0.980
Report of faculty mentors in addiction medicine	2.61	<0.001*
Report of faculty frequently teaching about substance use disorders	5.79	<0.001*

**Indicates statistical significance*

Acknowledgements: *We would like to acknowledge Dr. Joji Suzuki, MD, Director of the Division of Addiction Psychiatry at Brigham & Women's Hospital, and members of the Massachusetts Student Coalition on Addiction, who assisted with survey distribution, including Emily Geldwert, Benjamin Dossetter, Laura Ha, Wei Sum Li, Siva Sundaram, Helen Jack, and John Weems.*

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Compliance with Ethical Standards:

Conflict of Interest: *The authors declare that they have no conflict of interest.*

REFERENCES

1. U.S. Centers for Disease Control and Prevention. Deaths from prescription overdose. Available at: https://www.cdc.gov/drugoverdose/data/overdose.html. Published April 30, 2015. Accessed July 6, 2015.
2. Massachusetts Department of Public Health. Number of opioid-related overdose deaths, all intents by county, MA residents: 2000–2016. Available at: https://www.mass.gov/eohhs/docs/dph/stop-addiction/current-statistics/overdose-deaths-by-county-including-map-may-2017.pdf. Published May 2017. Accessed August 25, 2017.
3. **Agerwala SM, McCance-Katz EF.** Integrating screening, brief intervention, and referral to treatment (SBIRT) into clinical practice settings: a brief review. J Psychoactive Drugs. 2012;44(4):307–17.
4. **Miller NS, Sheppard LM, Colenda CC, Magen J.** Why physicians are unprepared to treat patients who have alcohol- and drug-related disorders. Acad Med. 2001;76(5):410–8.
5. **Hoffmann NG, Chang AJ, Lewis DC.** Medical student attitudes toward drug addiction policy. J Addict Dis. 2000;19(3):1–12.
6. **Wakeman SE, Pham-Kanter G, Donelan K.** Attitudes, practices, and preparedness to care for patients with substance use disorder: results from a survey of general internists. Subst Abus. 2016;37(4):635–41.