

# First-Year Medical Students' Perceptions of Stigma Toward People With Opioid Use Disorder Before and After an Educational Intervention

Substance Use & Addiction Journal  
2024, Vol. 45(3) 486–492  
Copyright © 2024 by AMERSA, Inc.  
(Association for Multidisciplinary  
Education and Research in  
Substance use and Addiction)  
Article reuse guidelines:  
sagepub.com/journals-permissions  
DOI: 10.1177/29767342241236302  
journals.sagepub.com/home/saj



Rachel L. Graves, MD<sup>1</sup> , Frances S. Shofer, PhD<sup>2</sup>, Joshua B. Kayser, MD, MPH, MBE, FCCM<sup>3</sup>, and Jeanmarie Perrone, MD, FACMT<sup>2,4</sup>

## Abstract

**Background:** Stigma among medical trainees toward people with opioid use disorder (OUD) compounds the problems associated with opioid addiction. People with OUD who experience overt and implicit stigma from healthcare providers are less likely to seek and receive treatment, further restricting their access to already limited resources. The objective of our study was to assess an educational strategy to mitigate stigma toward people with OUD among first-year medical students.

**Methods:** This study assessed perceptions of stigma toward people with OUD among first-year medical students using an adaptation of a brief, validated opioid stigma scale before and after an educational intervention. The intervention consisted primarily of a recorded panel in which people with a history of OUD shared their experiences with stigma followed by small group discussions.

**Results:** After the educational intervention, students were more likely to respond that (1) they believed most people held negative beliefs about people with OUD and (2) they personally disagreed with negative statements about people with OUD.

**Conclusions:** Educational interventions addressing stigma toward people with OUD are potentially effective and should be integrated into medical curricula. Such interventions are a crucial part of the effort to improve the medical care of people with OUD.

## Keywords

stigma, opioids, medical education, opioid use disorder, substance use disorder

## Highlights

Our study assesses first-year medical students' negative perceptions and beliefs about people with opioid use disorder (OUD) and demonstrates that an educational session may affect those beliefs. After the educational intervention, which included accounts of personal experiences with stigma by people in recovery from OUD, students were more likely to endorse awareness of public stigma toward people with OUD and less likely to endorse personally held stigma toward people with OUD. Our findings demonstrate that educational interventions that include first person accounts of stigma from people with lived experience may change medical students' negative perceptions and beliefs toward people with OUD and reduce the stigma they hold personally toward this population. Our findings have implications for medical educators and those invested in improving treatment of people with OUD.

## Introduction

The physical and social harms of opioid use disorder (OUD) continue to affect millions of people.<sup>1-4</sup> Despite the prevalence of OUD and the increase in public attention it has received over recent years, stigma toward people with OUD continues to present a significant barrier to

<sup>1</sup>Department of Anesthesiology, Wake Forest University, Winston-Salem, NC, USA

<sup>2</sup>Department of Emergency Medicine, University of Pennsylvania, Philadelphia, PA, USA

<sup>3</sup>Department of Medicine, Division of Pulmonary, Allergy and Critical Care, Department of Medical Ethics and Health Policy, University of Pennsylvania, Philadelphia, PA, USA

<sup>4</sup>Penn Medicine Center for Addiction Medicine and Policy, Philadelphia, PA, USA

### Corresponding Author:

Rachel L. Graves, Department of Anesthesiology, Wake Forest University, I Medical Center Boulevard, Winston-Salem, NC 27157, USA.

Email: gravesrach@gmail.com

treatment.<sup>5-9</sup> The COVID-19 pandemic further taxed the systems that provide care to people with OUD and exacerbated the isolation that accompanies OUD.<sup>10</sup>

Stigma is defined as “a mark of disgrace or infamy; a stain or reproach, as on one’s reputation”; or “a mental or physical mark that is characteristic of a defect or disease.”<sup>11</sup> It manifests interpersonally, psychologically, and physically. OUD is stigmatized by people who have it (internalized stigma), other people (public stigma), and at the macro level (structural stigma). Internalized, public, and structural stigma hinder the public health response to the opioid crisis.<sup>4,9,12</sup> Public stigma manifests as prejudice and discrimination. It results in behavioral responses such as avoidance of people with OUD and the withholding of opportunities for employment, housing, and medical assistance.<sup>9,13,14</sup> Internalized stigma may result in greater shame, fear, and social isolation. It may also deter people with substance use disorders (SUDs) from seeking medical treatment.<sup>9,15,16</sup>

Healthcare providers are in a position of opportunity and responsibility to assist people with OUD through the immediate impact of their interactions. They have a critical opportunity to reduce harm, facilitate referral to treatment, enhance motivation, prescribe evidence-based medication treatments for OUD, instill hope, and provide unconditional positive regard. The first contact people with OUD have with the healthcare system is often through frontline providers in primary care or emergency department settings. If these interactions are not managed skillfully, empathetically, and with consciousness of the challenges that people with OUD face within and outside the healthcare system, they may have a detrimental effect on patients’ immediate and long-term prospects of treatment and recovery.

It has been shown that healthcare providers commonly share in the widely held stigma against people with SUDs, a fact which may contribute to lower quality care, less personal engagement, and diminished empathy toward these patients.<sup>17</sup> One essential element of improving access to treatment and recovery services for people with OUD is overcoming the negative beliefs and opinions they perceive from healthcare providers. Understanding the attitudes, beliefs, and perceptions of current and future healthcare providers and ensuring appropriate education about OUD are key components of this effort.

The objective of this study was to use an adaptation of a brief, validated opioid stigma scale to assess first-year medical students’ perceptions of stigma toward people with OUD before and after an educational intervention consisting primarily of a recorded panel in which people with lived experience of OUD shared their experiences with stigma followed by small group discussions. The authors’ hypothesis was that a multifaceted educational intervention among medical students would increase their awareness of negative perceptions held by the public and

decrease their personally held negative beliefs toward people with OUD.

## Methods

This was a survey study conducted among first-year medical students enrolled in the medical degree program at the University of Pennsylvania Perelman School of Medicine. The study was deemed exempt by the Institutional Review Board at the University of Pennsylvania (Protocol Number 842640). Participants were all first-year, preclinical medical students enrolled in a course designed to provide a longitudinal education in professionalism and humanism in medicine entitled the doctoring course series. There were no additional inclusion or exclusion criteria.

As part of the course curriculum, all students enrolled in the course (n=158) were required to independently review educational materials about stigma and OUD and to subsequently participate in a corresponding small group discussion session. Students were electronically sent the educational materials prior to the small group session. These materials included a prerecorded plenary session, an article about stigma toward people with OUD and OUD treatment,<sup>18</sup> a reference sheet about stigmatizing language as it relates to SUDs,<sup>19</sup> and a podcast about the opioid epidemic.<sup>20</sup> The prerecorded plenary sent to students involved in this study was of an educational session that had been conducted in person the year prior to the study. At that time, COVID restrictions were not in place, so the session could be held live. The session began with an approximately 15-minute didactic presentation which included an introduction to the local and national epidemiology of OUD and current issues in the treatment of OUD with an emphasis on the impact of stigma and stigmatizing language. The didactic section was followed by presentations from 2 speakers, a certified recovery specialist and a former nurse, both of whom identified as people in recovery from OUD, during which they shared how they had been affected by stigma in the course of their OUD. After the speakers’ presentations, a question and answer session was conducted during which live audience members had the opportunity to ask questions of either or both speakers.

After independently reviewing the educational materials, students participated in scheduled small group discussion sessions. Small groups were conducted using a virtual platform with video capability to preserve “face-to-face” interaction among group members. Each small group consisted of an average of 12 student participants and 2 faculty facilitators who guided the discussion. Facilitators were all faculty physicians from a variety of specialty backgrounds employed by University of Pennsylvania Perelman School of Medicine who taught the longitudinal doctoring course as part of their academic appointment.

Students were electronically sent a 6-item opioid stigma survey adapted from a scale previously developed and validated by Yang et al,<sup>21</sup> prior to and following the educational intervention (pre- and postsurveys, respectively). Four statements (survey questions 1-4) assessed participants' beliefs about public perceptions of people with OUD, including whether people with OUD were (1) not trustworthy, (2) dangerous, (3) lazy, or (4) to blame for

their OUD. Two statements (questions 5 and 6) assessed participants' personal perceptions of people with OUD, including whether they believed a person with OUD was (1) not trustworthy or (2) dangerous. All survey items were answered according to a 5-point Likert scale where a score of 1 = strongly disagree, 2 = disagree, 3 = unsure, 4 = agree, 5 = strongly agree. The survey and classification of each item is shown immediately below.

Number	Survey item	Public or personal stigma
1	Most people believe that a person with OUD cannot be trusted.	Public
2	Most people believe that a person with OUD is dangerous.	Public
3	Most people think that a person with OUD is to blame for their problems.	Public
4	Most people believe that a person with OUD is lazy.	Public
5	I believe that a person with OUD cannot be trusted.	Personal
6	I believe that a person with OUD is dangerous.	Personal

Though participation in the educational intervention was a mandatory component of the medical students' course curriculum, participation in this study was optional. We assigned unique usernames to students who chose to participate in the surveys. Each survey participant used the same unique username for completion of the pre- and postsurvey.

Summary statistics were calculated for demographic characteristics of the participants (age and gender) and each survey item. A Wilcoxon signed rank test was used to assess differences between pre- and postsurvey responses for students who completed both surveys. All analyses were performed using SAS statistical software (version 9.4; SAS Institute).

## Results

Of the 158 students enrolled in the doctoring course, 77 completed the presurvey (response rate 49%) and 42 completed the postsurvey (response rate 27%). Of the 42 postsurvey participants, 37 (88%) also completed the presurvey. Overall response rate for both surveys was 23% for a final sample size of 37. Of the 37 presurvey participants, 25 (68%) identified as female and 29 (78%) were younger than 25 years (Table 1).

On the presurvey, students were most likely to "agree" or "strongly agree" with the first 3 public stigma survey items (not trustworthy, 78%; dangerous, 65%; and blameworthy, 68%). Postsurvey responses were not significantly different from presurvey responses for the first 3 survey questions, with most participants responding "agree" or "strongly agree" (not trustworthy, 81%; dangerous, 70%; and blameworthy, 68%). Conversely, for the fourth survey item, "Most people believe that a person with OUD is lazy," 30% of participants responded "agree" or "strongly agree" on the presurvey, whereas on the postsurvey, 49%

**Table 1.** Demographic Characteristics of Students Who Participated in Both the Presurvey and Postsurvey to Assess Perceptions of Stigma Toward People With OUD Before and After Educational Intervention.

Demographic characteristic	n (%)
Age (years)	
<25	29 (78)
25-29	7 (19)
35-39	1 (3)
Gender	
Female	25 (67)
Male	11 (30)
Nonbinary or other	1 (3)

Abbreviation: OUD, opioid use disorder.

responded "agree" or "strongly agree" (difference = 19%,  $P = .0136$ ).

Compared to the public stigma presurvey responses, participants were less likely to respond "agree" or "strongly agree" to the 2 personal stigma items on the presurvey (question 5: "I believe that a person with OUD cannot be trusted," 22%; question 6: "I believe that a person with OUD is dangerous," 16%). A significantly smaller proportion of participants responded "agree" or "strongly agree" to questions 5 and 6 on the postsurvey (8% and 3%, respectively) as compared to the presurvey (difference = 14% and 13%,  $P < .0001$  and  $.0004$ , respectively; Table 2).

## Discussion

Although most of the students who participated in this study expressed disagreement with negative stereotypes about people with OUD, other studies have shown that healthcare providers and trainees often have negative attitudes toward patients with SUDs and frequently lack

**Table 2.** Responses of First-Year Medical Students to Survey Items Assessing Perceptions of Stigma Toward People With Opioid Use Disorder Before (Presurvey) and After (Postsurvey) Educational Intervention.

Question	Likert scale	n (%)					P value
		1	2	3	4	5	
Question 1	Pretest	0 (0)	3 (8)	5 (14)	24 (65)	5 (14)	.8221
	Posttest	0 (0)	2 (5)	5 (14)	26 (70)	4 (11)	
Question 2	Pretest	0 (0)	7 (19)	6 (16)	21 (57)	3 (8)	.4403
	Posttest	0 (0)	5 (14)	6 (16)	23 (62)	3 (8)	
Question 3	Pretest	0 (0)	5 (14)	7 (19)	21 (57)	4 (11)	>.9999
	Posttest	0 (0)	3 (8)	9 (24)	23 (62)	2 (5)	
Question 4	Pretest	2 (5)	10 (27)	14 (38)	10 (27)	1 (3)	.0136
	Posttest	0 (0)	8 (22)	11 (30)	17 (46)	1 (3)	
Question 5	Pretest	3 (8)	17 (46)	9 (24)	8 (22)	0 (0)	.0001
	Posttest	8 (22)	22 (59)	4 (11)	3 (8)	0 (0)	
Question 6	Pretest	4 (11)	19 (51)	8 (22)	6 (16)	0 (0)	.0004
	Posttest	10 (27)	21 (57)	5 (14)	1 (3)	0 (0)	

appropriate education, training, and support necessary to work most effectively with this patient population.<sup>16,22</sup> There remains resistance among healthcare providers to the idea that SUDs are complex biopsychosocial phenomena that include physical changes and require medical treatment, psychological and behavioral intervention, and community support, not just “moral education” encouraging self-control and abstinence. The idea that SUDs are a “moral failing” is also common in the community and is associated with discrimination and negative attitudes toward policies that are favorable to people with OUD.<sup>7,8,23,24</sup> Negative perceptions and misinformation discourage people with SUDs from seeking appropriate care and may contribute to social isolation, exacerbating the underlying SUD in a vicious cycle.<sup>1,9,19,25</sup> Incomplete and frankly misinformed concepts about SUDs acted on by healthcare providers, consciously or unconsciously, are particularly harmful and all too often contribute to the exclusion of people with SUDs from appropriate treatment and alienation from the healthcare system entirely.<sup>26</sup>

Educational interventions represent an important opportunity to address stigmatization of people with OUD among medical trainees. A 2018 US government federal report recommended that all medical professionals receive training in screening, identification, and prevention and treatment services for SUDs,<sup>27</sup> but it is unknown how many health professional students receive this education as part of their training. The results of our study demonstrate that relatively simple interventions can affect medical students’ expressed beliefs about people with OUD. Our approach is one of many potential approaches to incorporating education about OUD into a broader medical curriculum. Our results are consistent with prior studies which have shown that targeted educational interventions, including those using virtual media platforms, can reduce stigmatizing attitudes.<sup>28-30</sup>

One unique aspect of our results was the discrepancy between participants’ responses to survey items about public versus personal stigma; specifically, participants were more likely to endorse belief in the presence of negative views held by the public and less likely to report sharing in those negative attitudes toward people with OUD personally. The authors hypothesize that the increased likelihood to endorse awareness of public stigma may be a result of having heard personal testimony from people with personal experience of OUD and its accompanying stigma. Both speakers had experienced the pain of discrimination, rejection, shame, and loss of social standing in the course of their active struggles with OUD. They described painful experiences with healthcare providers in which they perceived themselves to be on the receiving end of stigma and the lasting impact those interactions had on them. The power of personal narrative to increase awareness may explain part of the change in survey responses to questions about public stigma before and after the intervention. This interpretation would be consistent with prior studies of antistigma interventions demonstrating that personal contact and stories of recovery reduce stigma among medical trainees.<sup>31,32</sup>

Another important aspect of this study was the small group discussion. Key positive attributes of discussion-based interventions include their minimal requirement for material resources, ability to be flexibly implemented in the live or virtual environment, and potential to encourage critical thinking and incorporate multiple perspectives on a given topic. They provide the opportunity for medical trainees to model and practice appropriate, nonstigmatizing language in reference to people with OUDs and SUDs in general.<sup>14</sup> Discussion in an educational setting rather than a clinical setting also allows medical students to gain familiarity with OUD and its treatment outside of a stressful environment in which meaningful discussion may be



more difficult. A 2022 study by Brown et al<sup>22</sup> of stigma among healthcare providers found that providers who have less familiarity with OUD and medications for OUD were significantly more likely to endorse stigmatizing views of illicit opioid use. Familiarity gained through exposure during training may help prevent medical students from having negative interactions with people who have OUD in the clinical setting.

Education of medical trainees early in their undergraduate medical career may also help counter the propagation of stigmatizing beliefs about people with OUD from other providers. It has been demonstrated that language, including written documentation in the electronic medical record, contributes to stigma and can perpetuate bias.<sup>5,14,16,33-36</sup> The negative impact of stigmatizing language is increasingly recognized in medical education, practice, and research. In 2014, authors from the editorial team of the *Substance Abuse* journal published an article recognizing the importance of appropriate use of language in the field of addiction and calling authors, reviewers, and readers to use person-first language that focuses on the medical nature of SUDs and their treatment, promotes the recovery process, and avoids perpetuating negative stereotypes and biases through slang and idioms.<sup>37</sup> The National Institute on Drug Abuse published the “Words Matter” list which outlines terms to use and avoid when talking about SUDs.<sup>19</sup> However, the use of stigmatizing language by health professionals remains common. A 2023 study by Weiner et al<sup>36</sup> used natural language processing to assess language used in notes of encounters between 30 391 patients with SUDs and healthcare providers. They found that stigmatizing language was used in the notes of 18 727 (61.6%) of these patients.<sup>36</sup> Goddu et al<sup>34</sup> demonstrated in their 2017 study that exposure of physicians in training to stigmatizing language in a patient’s electronic chart was associated with more negative attitudes toward the patient and less aggressive management of patients’ pain. In this way, bias may be propagated from 1 clinician to another through stigmatizing language, even if it is not taught explicitly.

Efforts to provide education to healthcare providers that promotes the use of respectful, person-first language and explores the impact of stigma, while critically important, must be considered in the context of larger obstacles that healthcare providers face when caring for people with OUD. Even a robust, nuanced understanding of these issues does not alone prepare providers to address the myriad issues that hinder care of people with SUDs, including the frustration, anger, hopelessness, and helplessness providers may experience confronting a system plagued by inequality and inadequate resources. Ideally, specific educational interventions like the one used in this study would be situated within a broader curriculum designed to arm trainees with an understanding of the ways in which the healthcare system intersects with key social and economic

issues that disproportionately affect people who have been marginalized and stigmatized, including people with SUDs, and ways they may productively engage with those issues.

### Limitations

The group of medical students surveyed in this study is not representative of medical students in general, medical providers who have completed training, or the general population. Medical providers later in their careers may have different perceptions of SUDs for which different types of education or intervention would be more effective. The overall number of students available to participate in the study and the number that ultimately chose to participate were small. The low response rate has the potential to skew the results and limit conclusions that can be made based on the data. Students who elected not to participate in the intervention may have done so because they had particularly negative views of people with OUD, potentially resulting in selection bias. We suspect that the relatively small number of participants was in part due to the use of an online platform, which was necessary due to safety concerns during the COVID-19 pandemic. In-person attendance may have increased survey response rates and helped ensure active participation in the educational intervention. However, use of electronic media and virtual platforms has become a necessity rather than a convenience under certain circumstances. Limitations related to this aspect of the study may have instructional value. The survey administered to students in this study was slightly adapted from the previously validated opioid stigma survey by Yang et al.<sup>21</sup> Specifically, the word “man” was changed to “person” and the phrase “person who is addicted to opioids” was changed to “person with opioid use disorder.” Changes were made with the intention of being inclusive of all genders and modeling appropriate reference to people with OUD. Although it is possible that these changes may influence responses, we consider this unlikely, as the language was not otherwise altered from the original survey and the core meaning of each survey item was preserved.

### Conclusions

In this study, first-year medical students completed a validated survey assessing their perceptions of public and personal stigma toward people with OUD before and after participating in an educational intervention which consisted primarily of a recorded panel in which people with a history of OUD shared their lived experiences with stigma followed by small group discussions. After the intervention, participants were more likely to endorse believing that the public believed people with OUD were lazy and

were less likely to personally believe that people with OUD were untrustworthy or dangerous. Educational interventions for medical students may help reduce stigma toward people with OUD and are a crucial part of the broader effort to improve the care of people with OUD.

### Author Contributions

RLG co-designed this study and was primary author of the manuscript. JBK co-designed this study and assisted with implementation efforts in his role as course director for the doctoring course. FSS conducted all statistical analyses and contributed significantly to the organization and content of the manuscript. JP co-designed the study, created the educational materials, facilitated the panel discussion included in the educational materials, and provided edits of serial manuscript drafts.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

### Compliance, Ethical Standards, and Ethical Approval

This study was deemed exempt by the Institutional Review Board of the University of Pennsylvania (IRB Protocol Number 842640).

### ORCID iD

Rachel L. Graves  <https://orcid.org/0000-0001-5253-044X>

### References

- Volkow ND. Stigma and the toll of addiction. *N Engl J Med.* 2020;382(14):1289-1290. doi:10.1056/NEJMp1917360
- Substance Abuse and Mental Health Services Administration. Key Substance Use and Mental Health Indicators in the United States: Results From the 2016 National Survey on Drug Use and Health. Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration; 2018. HHS Publication No. SMA 17-5044, NSDUH Series H-52. Accessed June 22, 2023. <https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSDUHF2017/NSDUHF2017.pdf>
- Rudd RA, Seth P, David F, Scholl L. Increases in drug and opioid-involved overdose deaths—United States, 2010-2015. *MMWR Morb Mortal Wkly Rep.* 2016;65(50-51):1445-1452. doi:10.15585/mmwr.mm655051e1
- Degenhardt L, Grebely J, Stone J, et al. Global patterns of opioid use and dependence: harms to populations, interventions, and future action. *Lancet.* 2019;394(10208):1560-1579. doi:10.1016/S0140-6736(19)32229-9
- McGinty EE, Barry CL. Stigma reduction to combat the addiction crisis—developing an evidence base. *N Engl J Med.* 2020;382(14):1291-1292. doi:10.1056/NEJMp2000227
- Corrigan PW, Nieweglowski K. Stigma and the public health agenda for the opioid crisis in America. *Int J Drug Policy.* 2018;59:44-49. doi:10.1016/j.drugpo.2018.06.015
- Adams ZA, Taylor BG, Flanagan E, et al. Opioid use disorder stigma, discrimination, and policy attitudes in a national sample of U.S. young adults. *J Adolesc Health.* 2021;69:321-328. doi:10.1016/j.jadohealth.2020.12.142
- Cheetham A, Picco L, Barnett A, Lubman DI, Nielsen S. The impact of stigma on people with opioid use disorder, opioid treatment, and policy. *Subst Abuse Rehabil.* 2022;13:1-12. doi:10.2147/SAR.S304566
- Garpenhag Dahlman D. Perceived healthcare stigma among patients in opioid substitution treatment: a qualitative study. *Subst Abuse Treat Prev Policy.* 2021;16(1):81. doi:10.1186/s13011-021-00417-3
- Jenkins WD, Bolinski R, Bresett J, et al. COVID-19 during the opioid epidemic—exacerbation of stigma and vulnerabilities. *J Rural Health.* 2021;37(1):172-174. doi:10.1111/jrh.12442
- Dictionary.com. Stigma. 2022. Accessed April 6, 2022. <https://www.dictionary.com/browse/stigma>
- Tsai AC, Kiang MV, Barnett ML, et al. Stigma as a fundamental hindrance to the United States opioid overdose crisis response. *PLoS Med.* 2019;16(11):e1002969. doi:10.1371/journal.pmed.1002969
- Corrigan PW, Watson AC. Understanding the impact of stigma on people with mental illness. *World Psychiatry.* 2002;1(1):16-20.
- Ledford V, Lim JR, Namkoong K, Chen J, Qin Y. The influence of stigmatizing messages on danger appraisal: examining the model of stigma communication for opioid-related stigma, policy support, and related outcomes. *Health Commun.* 2022;37:1765-1777. doi:10.1080/10410236.2021.1920710
- Luoma JB, O'Hair AK, Kohlenberg BS, et al. The development and psychometric properties of a new measure of perceived stigma toward substance users. *Subst Use Misuse.* 2010;45(1-2):47-57. doi:10.3109/10826080902864712
- Botticelli MP, Koh HK. Changing the language of addiction. *JAMA.* 2016;316(13):1361-1362. doi:10.1001/jama.2016.11874
- Van Boekel LC, Brouwers EPM, Van Weeghel J, et al. Stigma among health professionals towards patients with substance use disorders and its consequences for healthcare delivery: systematic review. *Drug Alcohol Depend.* 2013;131(1-2):23-35. doi:10.1016/j.drugalcdep.2013.02.018
- Olsen Y, Sharfstein JM. Confronting the stigma of opioid use disorder—and its treatment. *JAMA.* 2014;311(14):1393-1394. doi:10.1001/jama.2014.2147
- Grayken Center for Addiction, Boston Medical Center. Words matter. 2018. Accessed April 7, 2022. [https://www.bmc.org/sites/default/files/Patient\\_Care/Specialty\\_Care/Addiction-Medicine/LANDING/files/Words-Matter-Pledge.pdf](https://www.bmc.org/sites/default/files/Patient_Care/Specialty_Care/Addiction-Medicine/LANDING/files/Words-Matter-Pledge.pdf)
- Dubner SJ. Episode 402. The opioid tragedy, part 1: “We’ve addicted an entire generation.” *Freakonomics Radio.* Published January 15, 2020. Accessed February 25, 2024.

21. Yang LH, Grivel MM, Anderson B, et al. A new brief opioid stigma scale to assess perceived public attitudes and internalized stigma: evidence for construct validity. *J Subst Abuse Treat.* 2019;99:44-51. doi:10.1016/j.jsat.2019.01.005
22. Brown RL, Batty E, Lofwall M, Kiviniemi M, Kizewski A. Opioid use-related stigma and health care decision-making. *Psychol Addict Behav.* 2023;37(2):222-227. doi:10.1037/adb0000830
23. Taylor BG, Lamuda PA, Flanagan E, et al. Social stigma toward persons with opioid use disorder: results from a nationally representative survey of U.S. adults. *Subst Use Misuse.* 2021;56(12):1752-1764. doi:10.1080/10826084.2021.1949611
24. Wood E, Elliott M. Opioid addiction stigma: the intersection of race, social class, and gender. *Subst Use Misuse.* 2020;55(5):818-827. doi:10.1080/10826084.2019.1703750
25. Garrett R, Young SD. The role of misinformation and stigma in opioid treatment uptake. *Subst Use Misuse.* 2022;57(8):1332-1336. doi:10.1080/10826084.2022.2079133
26. Werder K, Curtis A, Reynolds S, Satterfield J. Addressing bias and stigma in the language we use with persons with opioid use disorder: a narrative review. *J Am Psychiatr Nurses Assoc.* 2022;28(1):9-22. doi:10.1177/10783903211050121
27. Madras BK. The president's commission on combating drug addiction and the opioid crisis: origins and recommendations. *Clin Pharmacol Ther.* 2018;103(6):943-945. doi:10.1002/cpt.1050
28. Yang J, Mackert M. The effectiveness of CDC's Rx Awareness campaigns on reducing opioid stigma: implications for health communication. *Health Commun.* 2023;38(5):925-934. doi:10.1080/10410236.2021.1982561
29. Mort SC, Diaz SR, Beverly EA. Using contact-based education to destigmatize opioid use disorder among medical students. *Teach Learn Med.* 2021;33(2):196-209. doi:10.1080/10401334.2020.1820869
30. Roelofs C, Sugerman-Brozan J, Kurowski A, Russell L, Punnett L. Promoting opioid awareness through a union-based peer training model. *New Solut.* 2021;31(3):286-297. doi:10.1177/1048291120982597
31. Wechsler D, Schomerus G, Mahlke C, Bock T. Effects of contact-based, short-term anti-stigma training for medical students: results from a randomized controlled trial. *Neuropsychiatr.* 2020;34(2):66-73. doi:10.1007/s40211-020-00337-x
32. Powers S, Craig W, Kohut M, Hallward A. Narrative podcasts to foster empathy and reduce stigma among third-year medical students. *Acad Psychiatry.* 2023;47(3):287-291. doi:10.1007/s40596-023-01764-y
33. Goodyear K, Haass-Koffler CL, Chavanne D. Opioid use and stigma: the role of gender, language and precipitating events. *Drug Alcohol Depend.* 2018;185:339-346. doi:10.1016/j.drugalcdep.2017.12.037
34. Goddu AP, O'Connor KJ, Lanzkron S, et al. Do words matter? Stigmatizing language and the transmission of bias in the medical record. *J Gen Intern Med.* 2018;33(5):685-691. doi:10.1007/s11606-017-4289-2
35. Kennedy-Hendricks A, Busch SH, McGinty EE, et al. Primary care physicians' perspectives on the opioid epidemic. *Drug Alcohol Depend.* 2016;165:61-70. doi:10.1016/j.drugalcdep.2016.05.010
36. Weiner SG, Lo YC, Carroll AD, et al. The incidence and disparities in use of stigmatizing language in clinical notes for patients with substance use disorders. *J Addict Med.* 2023;17:424-430. doi:10.1097/ADM.0000000000001145
37. Broyles LM, Binswanger IA, Jenkins JA, et al. Confronting inadvertent stigma and pejorative language in addiction scholarship: a recognition and response. *Subst Abuse.* 2014;35(3):217-221. doi:10.1080/08897077.2014.930372