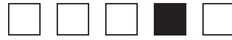

Effects of Implementing an Interactive Substance Use Disorders Workshop on a Family Medicine Clerkship

Rebecca E. Cantone, MD; Nonda S. Hanneman, BA; Matthew G. Chan, MD;
Rebecca E. Rdesinski, MSW, MPH

BACKGROUND AND OBJECTIVES: Substance use disorders (SUD) remain a public health crisis and training has been insufficient to provide the skills necessary to combat this crisis. We aimed to create and study an interactive, destigmatizing, skills-based workshop for medical students to evaluate if this changes students' self-reported knowledge, skills, and attitudes toward patients with SUD.

METHODS: We surveyed students on a required family medicine outpatient rotation at a Pacific Northwest medical school during clerkship orientation on their views regarding SUDs utilizing the validated Drug and Drug Problems Perceptions Questionnaire containing a 7-point Likert scale. After attending a substance use disorder workshop, they repeated the survey. We calculated differences between the paired pre- to postsurveys.

RESULTS: We collected the pre- and postdata for 118 students who attended the workshop and showed statistically significant positive differences on all items.

CONCLUSIONS: The positive change in the medical students' reported attitudes suggests both necessity and feasibility in teaching SUD skills in a destigmatizing way in medical training. Positive changes also suggest a role of exposing students to family medicine and/or primary care as a strategy to learn competent care for patients with substance use disorders.

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In 2014, 20.2 million adults in the United States had a substance use disorder (SUD) and only 7.5% received treatment.[1] Gaps in treatment remained in 2018[2] and overdose deaths are increasing.[3] Negative attitudes toward patients with SUD contribute to this gap[4,5] and create barriers for physicians to obtain skills to improve these inequities.[6] These biases are formed early in life, reinforced by social stereotypes, prevalent amongst health care workers, and linked to care inequities.[7-9] As medical students harbor biases[9] from past experiences, students agree SUDs should be addressed in medical education.[10] While this knowledge may increase with medical training, poor confidence and negative attitudes remain in practice.[11-12] More than 50% of patients report that their primary care provider did not address their substance use,[10] showing skills deficits and creating an opportunity for family medicine (FM) educators to use their broad lens to improve care.

Calling attention to one's bias and taking active steps to individuate treatment is a strategy to improve inequities,[7,9] and curricula to reframe SUD as a medical disease are needed. Lack of faculty expertise, time, or requirements from accrediting organizations[13] limit access to this training, even though such workshops can improve attendees' knowledge, attitudes, skills, and confidence toward the care of patients with SUD.[6,13-18] We therefore hypothesized that an FM clerkship workshop for medical students to reframe SUD as a treatable medical disease would improve their self-reported knowledge, skills, and attitudes towards this care.

Methods

The SUD workshop was designed as one of many weekly didactics during a required 4-week FM clerkship at a Pacific Northwest medical school. Faculty physicians with experience in SUD treatment and education developed the curriculum utilizing a flipped-classroom model to engage learners in a patient-centered approach to practice history taking, focus on SUD as a treatable medical diagnosis, address stigma, and

From the Department of Family Medicine (Drs Cantone and Chan, and Ms Rdesinski), School of Medicine (Ms Hanneman), Oregon Health & Science University, Portland, OR.

understand recommendations for treatment in primary care (Table 1).

The study included 295 medical students enrolled in one FM clerkship between January 2018 and December 2019, and received institutional review board approval. Student demographics were not collected to maintain anonymity to the clerkship director; however, the student body has an average age of 26 years, is over 50% female-identifying, and over 80% have Oregon residency or heritage.[19]

Table 1: SUD Workshop Curriculum

Objective	Activity	Learning Points	Flipped Classroom?
Define SUDs	Review diagnostic criteria	• Focus on the treatable, medical disease	Yes—DSM previously reviewed by learners
Perform a comprehensive SUD history	Discuss barriers to obtaining a good history and reasons people seek care	• Avoid use of terms like "illicit" and "do you use any drugs" to focus on normalizing "what substances do you use?" • Discuss stigma and lack of resources available as limitation to seeking care and/or minimizing reported use of substances	Yes—Student driven based on prior communications workshops, faculty facilitates
Practice focused histories based on substance	Students volunteer what they would ask for each substance separately, including alcohol, tobacco, methamphetamines, and opioids	• Discuss harm reduction and patient-centered terms • Less focus on other stimulants as less common in this state compared to methamphetamines • Less emphasis on marijuana due to legalization in our state, but discussed later in workshop	Yes—Students review what they have seen in practice
Discuss physical exam findings	Students mention what they have seen or read about as signs of possible substance use	• Address signs of intoxication or withdrawal for multiple different substances, mental status exam, screenings for substance use and mood, physical signs of injection use	Yes—Students review pathophysiology
Define recommended workup	Interactive discussion of tests to order at visits where patient or provider notes SUD	• Discuss patient centered discussion for urine drug screening, infectious disease screening and echocardiogram based on type of use, consideration of liver function.	No—new information for most students
Discuss how to treat alcohol and tobacco use disorder	Students volunteer what they know	• Discuss quit lines, counseling/behavioral strategies, motivational interviewing. • Nicotine: nicotine replacement, varenicline, bupropion • Alcohol: naltrexone, acamprosate, gabapentin, topiramate, disulfuram, benzodiazepines	Yes—review prior teaching and practice experiences
Discuss medications to treat opioid use disorder	Students discuss methadone and buprenorphine and learn about naltrexone and naloxone	• Recommend naloxone for any patient using any type of opioid • Discuss differences in pharmacology and accessibility of buprenorphine and methadone, with emphasis that FM providers can prescribe buprenorphine in primary care if trained • Discuss oral and injectable naltrexone • Discuss initiation and maintenance medication, use in chronic pain, use in pregnancy, and treatment planning	No—instructor delivers new information
Discuss behavioral interventions for SUD	Discuss substances with no current medical treatment options	• Acknowledge withdrawal and tapering options	No—instructor leads

Abbreviations: SUD, substance use disorder; DSM, Diagnostic and Statistical Manual of Mental Disorders, FM, family medicine.

We selected the 20-question, 7-point Likert scale Drug and Drug Problems Questionnaire (DDPPQ) as it was more patient-centered than other validated scales, despite some outdated terms.[20-22] To preserve validity, language was not altered. We gave students this questionnaire (Table 2) at clerkship orientation, and again after the workshop (3 weeks later) in person or via email. We paired surveys by unique identifiers to observe changes via a pretest-posttest study design. To account for different starting scores due to prior experiences, we reported changes instead of the discrete number on the Likert scale. We

Table 2: Comparing Mean Difference by Survey Item by Group, 7-point Likert Scale (R=Reverse Scoring)

Survey Item*	Pre Mean (SD) N=118	Post Mean (SD) N=118	Mean Difference (SD)	S Score	*P* Value
Q1 - I feel I have a working knowledge of drugs and drug related problems.	4.4 (1.2)	5.6 (0.7)	1.2 (1.1)	1,806.0	<.0001
Q2 - I feel I know enough about the causes of drug problems to carry out my role when working with drug users.	3.5 (1.3)	5.2 (0.9)	1.8 (1.1)	2,710.5	<.0001
Q3 - I feel I know enough about the physical effects of drug use to carry out my role when working with drug users.	3.8 (1.3)	5.2 (0.8)	1.4 (1.1)	2,254.5	<.0001
Q4 - I feel I know enough about the psychological effects of drugs to carry out my role when working with drug users.	3.8 (1.4)	5.2 (0.9)	1.4 (1.2)	2,079.0	<.0001
Q5 - I feel I know enough about the factors which put people at risk of developing drug problems to carry out my role when working with drug users.	4.2 (1.3)	5.4 (1.0)	1.2 (1.3)	1,851.5	<.0001
Q6 - I feel I know how to counsel drug users over the long-term.	2.6 (1.2)	4.8 (1.1)	2.1 (1.4)	2,717.0	<.0001
Q7 - I feel I can appropriately advise my patients/clients about drugs and their effects.	3.4 (1.2)	5.1 (1.0)	1.7 (1.2)	2,665.0	<.0001
Q8 - I feel I have the right to ask patients/clients questions about their drug use when necessary.	5.0 (1.2)	6.1 (0.9)	1.1 (1.2)	1,665.0	<.0001
Q9 - I feel I have the right to ask a patient for any information that is relevant to their drug problems.	4.8 (1.2)	6.1 (0.9)	1.3 (1.3)	1,947.5	<.0001
Q10 - If I felt the need when working with drug users I could easily find someone with whom I could discuss any personal difficulties that I might encounter.	4.4 (1.3)	5.9 (1.1)	1.5 (1.4)	2,171.0	<.0001
Q11 - If I felt the need when working with drug users I could easily find someone who would help me clarify my professional responsibilities.	4.6 (1.2)	5.8 (1.1)	1.1 (1.3)	1,785.5	<.0001
Q12 - If I felt the need I could easily find someone who would be able to help me formulate the best approach to a drug user.	4.4 (1.2)	5.8 (1.1)	1.4 (1.3)	2,047.0	<.0001
Q13R - I feel that there is little I can do to help drug users.	5.1 (1.2)	5.9 (1.0)	0.8 (1.2)	1,285.0	<.0001
Q14 - I feel I am able to work with drug users as well as other client groups.	4.4 (1.4)	5.4 (1.2)	1.1 (1.4)	1,401.5	<.0001
Q15R - All in all I am inclined to feel I am a failure with drug users.	5.1 (1.0)	5.8 (1.0)	0.7 (1.2)	1,190.0	<.0001
Q16R - In general, I have less respect for drug users than for most other patients/clients I work with.	5.7 (1.2)	6.2 (1.0)	0.4 (0.9)	564.5	<.0001
Q17R - I often feel uncomfortable when working with drug users.	4.7 (1.4)	5.4 (1.3)	0.7 (1.5)	1,011.5	<.0001
Q18 - In general, one can get satisfaction from working with drug users.	5.3 (1.0)	5.9 (0.9)	0.6 (0.9)	928.5	<.0001
Q19 - In general, it is rewarding to work with drug users.	5.0 (1.0)	5.5 (1.1)	0.5 (1.0)	937.0	<.0001
Q20 - In general, I feel I can understand drug users.	4.4 (1.1)	5.2 (1.1)	0.9 (1.1)	1,476.5	<.0001

*Source: Watson H, Maclaren W, Kerr S. Staff attitudes towards working with drug users: development of the Drug Problems Perceptions Questionnaire. Addiction. 2007;102(2):206–15.

reverse-scored items 13, 15, 16, and 17. We discarded surveys that could not be paired due to nonmatching identifiers or lack of both surveys. We compared differences in pre- and postscores using a one-sided Wilcoxon Signed Rank Sum test using SAS 9.4 software (SAS Institute Inc, Cary, NC) to observe if there was a positive shift in scores, defined as a change in the DDPPQ Likert scale in a direction of more positive self-reported knowledge, skills or attitudes.

Results

During the study, 210 students attended the workshop and 118 paired surveys were included in the analysis. There were statistically significant improvements in all items (Table 2), with the largest improvements on the following items: Q2—"I feel I know enough about the causes of drug problems to carry out my role when working with drug users" (1.8 increase), Q6— "I feel I know how to counsel drug users over the long-term" (2.1 increase), Q7— "I feel I can appropriately advise my patients/clients about drugs and their effects" (1.7 increase), and Q10— "If I felt the need when working with drug users I could easily find someone with whom I could discuss any personal difficulties that I might encounter" (1.5 increase).

Discussion

This study finds that teaching SUD as a treatable, medical disease is associated with improvements in self-reported knowledge, skills and attitudes in FM clerkship medical students, and that a short intervention can be associated with positive change. The curriculum focuses on patient-centered, destigmatized, primary care treatment that may explain the distinct improvements in questions 2, 6, 7, and 10. These improvements may help decrease treatment gaps as students form their professional identities and enter practice.

Observing high-quality patient care from family physicians treating SUDs and interacting with patients during the FM clerkship may also have changed these reported attitudes, though practice styles vary greatly in clerkship sites. Repeating this study with a larger control group would help elucidate if there is additional positive change associated with attending the workshop, versus completing the clerkship alone.

This study included only one institution's FM curriculum and is thus limited in generalizability, but the intervention can be adopted by other programs. Our student demographics may not reflect other populations, so further studies are needed. Although not part of this study, follow-up surveys later in training would assist in learning if these changes persist. Additionally, as we did not test for knowledge gain and measured self-reported perceptions, measuring knowledge specifically may improve understanding of these interventions. More work should be done to continue to understand the most optimal training for SUDs to reduce barriers for the future medical workforce.

PRESENTATIONS: This work was briefly presented at the 2020 Society of Teachers of Family Medicine, Medical Student Education Conference, as part of the General Session entitled "Equity for Addictions Starts with Students."

CORRESPONDING AUTHOR: Address correspondence to Dr Rebecca Cantone, 3181 SW Sam Jackson Park Rd. Mail Code FM, Portland, OR 97239. 503-494-6948. cantone@ohsu.edu.

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