

An Interprofessional Course on Substance Use Disorders for Health Professions Students

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Abstract

Problem

Substance use disorders (SUDs) affect millions of Americans. Nevertheless, there is insufficient health care resource allocation for these patients. One reason may be the lack of education and training about SUDs in health professions programs.

Approach

The authors developed a required, interprofessional SUDs course for health professions students completing a one-month psychiatry clerkship within the Duke University Health System starting in November 2015. Students participated in six 1-hour class sessions led by an interdisciplinary faculty. Sessions focused

on core areas in SUDs education and used either a lecture with discussion or a small-group team-based learning format. Students completed one motivational interview, attended a 12-step recovery meeting, and wrote a reflection paper. On the first and last day of the clerkship, students measured their attitudes toward individuals with SUDs using the Substance Abuse Attitude Scale (SAAS) and toward interprofessionalism using the Interprofessional Attitudes Scale (IPAS).

Outcomes

Seventy-one students participated in the course from November 2015 to May 2016. Fifty-nine (83%) students

had paired pre- and postcourse SAAS and IPAS data. On the SAAS, students showed significant improvement in their median total score and nonmoralizing, treatment optimism, and treatment intervention scores. On the IPAS, students showed significant improvement in their median score on the teamwork, roles, and responsibilities domain.

Next Steps

The authors will continue to assess the course. Starting in academic year 2016–2017, the course will include four additional elements, and beginning in July 2016, accelerated bachelor of science in nursing students will participate in the course.

Problem

Substance use disorders (SUDs) affect millions of Americans, causing significant morbidity and mortality and costing the health care system billions annually.^{1,2} Additionally, tobacco use in patients with an active comorbid SUD is a major cause of health care cost, morbidity, and mortality.¹ Despite the enormity of this problem, there is an insufficient amount of health care resources allocated to care for these patients.² Nearly 90% of substance users in the United States do not receive treatment.³ One potential reason may be the lack of education and training in health professions programs about SUDs.²

For example, only a small percentage of medical school didactics and clerkship

experiences are dedicated to SUDs, providing very few opportunities for medical students to learn about the complexities of treating addiction, which requires both behavioral components (e.g., social determinants of health and cultural competency) as well as clinical components (e.g., screening, treatment, and motivational interviewing).² Most often, SUDs education is taught in preclinical medical school didactics with a focus on scientific knowledge, neurocircuitry, neurotransmitters, and pharmacology, leaving little curricular time for humanistic content related to addiction, such as teaching empathy, role-modeling patient interactions, and addressing implicit bias.³ In their systematic review of substance abuse courses in undergraduate medical education, Kothari et al⁴ identified that the available literature was of variable quality because of the heterogeneity of educational interventions and means of evaluation. The authors concluded that given the potential impact for future clinical practice, medical educators need to be more rigorous in the design and assessment of substance use education to ensure that medical school graduates have the basic competencies to meet

the needs of their patients. Reports from other health professions programs indicate similar deficiencies in the SUDs education and training of their learners.^{5,6}

With the recent White House proposal to expand access to treatment, to prevent overdose deaths through naloxone distribution, and to increase community prevention strategies, there is a clear imperative to educate and train health professions students to be knowledgeable, empathetic, and engaged to meet the growing treatment needs of this patient population.⁷ Official statements from health professions' educational organizations support SUDs education and training in their respective programs further backing this initiative.⁷ Teaching health professions students about SUDs in an interprofessional learning environment fosters more caring attitudes in all students, which, in turn, will cultivate a more supportive clinical culture of care.³

Approach

Recognizing the need to improve the education and training of health professions students, we developed an

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Acad Med. XXXX;XX:00–00.

First published online

doi: 10.1097/ACM.0000000000001766

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interprofessional course on SUDs for students completing a required psychiatry clerkship. The purpose of this Innovation Report is twofold: (1) to present the design and content of our SUDs course and (2) to provide an interim analysis of participating students’ pre- and postcourse scores on the Substance Abuse Attitude Scale (SAAS) and Interprofessional Attitudes Scale (IPAS).

Course description

The overarching goal of our SUDs course was to afford students numerous opportunities through didactics, team-based learning, facilitated discussions, and student-led motivational interviewing to gain an understanding of the biopsychosocial aspects of addiction and to demonstrate an ability to communicate and engage empathetically with patients with SUDs.

Starting in November 2015, we required health professions (medical, physician assistant, pharmacy, and social work) students assigned to a one-month psychiatry clerkship within the Duke University Health System, or at approved clinical training sites, to participate in the SUDs course. The course occurred monthly during the study period (from November 2105 to May 2016), repeating with each new group of health professions students.

On the first day of the clerkship, students assessed (1) their own attitudes toward individuals with SUDs as measured by the SAAS and (2) their attitudes toward interprofessionalism as measured by the IPAS.

Throughout the remainder of the clerkship, students participated in six 1-hour class sessions, in either a lecture with discussion or small-group team-based learning format, led by an interdisciplinary (psychiatrists, pharmacists, basic science researchers, licensed addiction specialists) faculty (all authors). Discussions used Socratic questioning with faculty facilitation. For team-based learning, students were divided into small interprofessional groups of three to four students to work on a case (which we created from numerous sources including MedEdPORTAL, relevant textbooks and articles, and our own clinical experiences), and then a discussion of their answers occurred among the entire class.

Each class session focused on a core area in SUDs education: (1) recognizing and screening patients for high-risk substance use, (2) motivational interviewing, (3) social determinants of health and neurobiology, (4) treatment, and (5) developing empathy and recognizing personal bias.

The course covered opioids, alcohol, tobacco, stimulants, and sedative–hypnotics; we did not discuss cannabis use disorder. We used Black and Andreasen’s *Introductory Textbook of Psychiatry* (2014 edition, American Psychiatric Publishing) as a guide for selecting topics.

For the motivational interviewing class session, we provided students with an introduction to the principles and processes of motivational interviewing. By the end of class, we expected students to be able to (1) name the four characteristics that constitute the “spirit” of motivational interviewing; (2) explain the four key processes through which motivational interviewing operates; (3) recognize the elements of change talk captured in the acronym DARN-CAT (desire, ability, reasons, need–commitment, activation, taking steps); and (4) understand the importance of using OARS (open-ended questions, affirmation, reflective listening, summarizing).

For the developing empathy and recognizing personal bias class sessions, students learned about psychological concepts (such as empathy, countertransference, and bias) and how these concepts can impact patient interactions. Students practiced recognizing their own emotional reactions through use of video clips and standardized clinical cases, and processed their own clinical experiences with guided reflection.

During the latter part of the clerkship, following the motivational interviewing class session, students completed one motivational interview. During these counseling sessions, students practiced motivational interviewing while psychiatry residents at their clerkship sites directly observed them. Residents provided verbal feedback to the students immediately following the completion of the counseling session and assessed students’ communication skills using the Liverpool Communication Skills Assessment Scale and students’ motivational interviewing skills by answering 10 “yes” or “no”

questions on the basic principles of motivational interviewing engagement. Students self-assessed their counseling sessions using these same scales.

Additionally, all students attended a 12-step recovery meeting, such as Alcoholics Anonymous or Narcotics Anonymous, and wrote a one-page reflection paper on their experience.

On the last day of the clerkship, students reassessed their attitudes toward individuals with SUDs and interprofessionalism on the SAAS and IPAS scales, respectively.

Course assessment

The primary and secondary outcomes we measured were the comparison of students’ pre- and postcourse scores on the SAAS and IPAS.

The SAAS covers five domains (nonmoralizing, treatment optimism, treatment intervention, permissiveness, and nonstereotyping) with 25 five-point Likert-scale questions, with possible responses ranging from 1 = strongly

Table 1
Demographics of Health Professions Students (n = 71), Substance Use Disorders Course, Psychiatry Clerkship, Duke University Health System, November 2015–May 2016

Demographic	Total, no. (%)
Health professions program	
Medicine	52 (73.2)
Pharmacy	11 (15.5)
Physician assistant	6 (8.5)
Social work	2 (2.8)
Gender	
Male	38 (53.5)
Female	33 (46.5)
Age	
20–28	60 (84.5)
> 28	11 (15.5)
Race/ethnicity	
White/Caucasian	35 (49.3)
Black/African American	14 (19.7)
Asian	16 (22.5)
American Indian/Native American	0 (0)
Hispanic/Latino	1 (1.4)
Pacific Islander	1 (1.4)
Other	4 (5.6)

disagree to 5 = strongly agree.⁸ The IPAS covers five domains (teamwork, roles, and responsibilities; patient centeredness; interprofessional bias; diversity and ethics; and community centeredness) with 27 five-point Likert-scale questions, with possible responses ranging from 1 = strongly disagree to 5 = strongly agree.⁹ For both scales, we reverse scored negatively worded questions as directed by the instructions. High scores on these two scales indicate a more positive attitude toward that question. See Tables 2 and 3 for information on how many questions were contained within the different domains on each scale. We purchased the SAAS instrument (scale and scoring worksheet) from the Center of Alcohol Studies at Rutgers University and secured permission to use the IPAS scale from the original authors.

The Duke Office of Clinical Research served as an honest broker for our project to protect and maintain the integrity

of collected data through REDCap (Vanderbilt, Nashville, Tennessee), a secure, Web-based application for building and managing online surveys and databases. A consent form accompanied the surveys and contained the following statement: "Completion of the survey indicates implied consent to participate. Your participation is voluntary. If you wish to decline, simply do not fill in the survey." Students received no incentive for completing the surveys.

A statistician from the Duke University School of Medicine Department of Biostatistics and Bioinformatics provided us with statistical support. The statistician had deidentified access to the REDCap data export, which prevented any fields marked as containing identifying data from being exported. The statistician then generated the data analysis using SAS 9.3 (SAS Institute Inc., Cary, North Carolina).

The Duke University Health System Institutional Review Board approved the project as exempted educational research.

Outcomes

During the study period (November 2015–May 2016), 71 students participated in the SUDs course, with each of the monthly cohorts consisting of approximately 10 students from at least three different health professions programs. Table 1 shows the demographics of these students.

Fifty-nine students had paired data for both their SAAS and IPAS assessments, respectively, which represents an 83% response rate. As noted above, although the SUDs course was a required component of students' psychiatry clerkship, participation on the SAAS and IPAS surveys was voluntary, with 12

Table 2

Results for Health Professions Students' Responses on the Pre- and Postcourse SAAS Surveys (n = 59), Substance Use Disorders Course, Psychiatry Clerkship, Duke University Health System, November 2015–May 2016^a

Domain	Precourse	Postcourse	Difference (postcourse – precourse) ^b	P value ^c	Effect size
Total score					
Mean (SD)	83.51 (6.06)	86.93 (6.41)	3.42 (6.06)		
Min, median, max	70.00, 84.00, 103.00	71.00, 88.00, 98.00	–9.00, 3.00, 18.00	< .001	0.564
Nonmoralizing					
Mean (SD)	17.10 (2.73)	18.31 (2.26)	1.21 (2.34)		
Min, median, max	11.00, 17.00, 25.00	13.00, 18.00, 24.00	–4.00, 1.00, 7.00	< .001	0.513
Treatment optimism					
Mean (SD)	19.83 (1.85)	21.02 (1.96)	1.19 (1.97)		
Min, median, max	15.00, 20.00, 25.00	16.00, 21.00, 25.00	–3.00, 1.00, 6.00	< .001	0.604
Treatment intervention					
Mean (SD)	21.73 (2.21)	22.66 (2.25)	0.93 (2.45)		
Min, median, max	17.00, 22.00, 26.00	18.00, 23.00, 28.00	–4.00, 0.00, 7.00	.007	0.380
Nonstereotyping					
Mean (SD)	11.61 (1.33)	11.63 (1.48)	0.02 (1.49)		
Min, median, max	8.00, 12.00, 15.00	8.00, 12.00, 14.00	–3.00, 0.00, 4.00	.958	
Permissiveness					
Mean (SD)	13.24 (3.54)	13.32 (3.54)	0.08 (2.92)		
Min, median, max	5.00, 13.00, 21.00	6.00, 13.00, 20.00	–7.00, 0.00, 7.00	.693	

Abbreviations: SAAS indicates Substance Abuse Attitude Survey; SD, standard deviation; min, minimum; max, maximum.

^aThe SAAS survey included 25 questions, with answers given on a five-point Likert scale, where 1 = strongly disagree and 5 = strongly agree. Each of the five domains contains a series of questions: nonmoralizing, treatment optimism, and permissive domains contain five questions each; treatment intervention contains six questions; nonstereotyping contains three questions; and one question was not scored, nor did it belong to a domain. The SAAS scores were computed per the instruction on the survey; for more information, see Chappel and Veach.⁸

^bThe min, median, max values in this column are based on the distribution of differences.

^cP value based on Wilcoxon signed-rank test of median difference equal to zero.

(17%) students choosing not to complete the surveys. We did not conduct any follow-up to understand why.

Table 2 shows results from the pre- and postcourse SAAS surveys. The median total survey score and individual domain scores for nonmoralizing, treatment optimism, and treatment intervention had significant improvement when comparing pre- and postcourse scores. The other two domains, permissiveness and nonstereotyping, did not demonstrate a significant change. However, these domains contained several questions related to marijuana use (now legalized in many states and relatively common among the general population), which we did not cover in the SUDs course. No significant differences were found between medical students and other health professions students (pharmacy, physician assistant, and social work) on the total survey score or individual domains when comparing changes in median scores (pre- to postcourse survey) between these two groups (data not shown).

Results from the pre- and postcourse IPAS surveys are given in Table 3. Students' median scores on the domain of teamwork, roles, and responsibilities improved significantly from the pre- to postcourse survey, which includes several questions pertaining to shared learning among health professions students. Although it was not a statistically significant finding, there was a reduction in students' scores on the interprofessional bias domain following course completion. Scores for the other three domains (patient centeredness, diversity and ethics, and community centeredness) were high (i.e., > 4) on the precourse surveys, indicating that students already agreed or strongly agreed with those statements and placed high value on patient- and community-centered care and respecting patient diversity. Notably, these three domains are more concerned with students' interactions with patients, community members, and policy makers than with their attitudes toward working collaboratively with other health professions students. No differences were found between medical students

and other health professions students (pharmacy, physician assistant, and social work) on the total survey score or individual domains when comparing changes in median scores (pre- to postcourse survey) between these two groups (data not shown).

Next Steps

Following completion of a six-class SUDs course during a one-month psychiatry clerkship, our students demonstrated an improvement in their attitudes toward individuals with SUDs and toward the teamwork, roles, and responsibilities of interprofessional teams as measured by pre- and postcourse SAAS and IPAS scores. The design of this course created opportunities for students to learn in the classroom and then apply what they learned in the clinical setting. In the classroom, students learned about the biopsychosocial aspects of addiction, motivational interviewing, and the importance of being an empathetic listener. On the floors of the clinic, students practiced motivational interviewing. Students were also asked to

Table 3

Results for Health Professions Students' Responses on the Pre- and Postcourse IPAS Surveys (n = 59), Substance Use Disorders Course, Psychiatry Clerkship, Duke University Health System, November 2015–May 2016^a

Domain	Precourse	Postcourse	Difference (postcourse – precourse) ^b	P value ^c	Effect size
Teamwork, roles, and responsibilities					
Mean (SD)	4.02 (0.62)	4.15 (0.52)	0.13 (0.49)		
Min, median, max	2.22, 4.00, 5.00	2.22, 4.00, 5.00	–1.11, 0.11, 1.00	.036	0.265
Patient centeredness					
Mean (SD)	4.57 (0.44)	4.61 (0.44)	0.04 (0.44)		
Min, median, max	3.80, 4.80, 5.00	3.00, 4.80, 5.00	–1.00, 0.00, 1.00	.327	
Interprofessional bias					
Mean (SD)	3.49 (0.66)	3.41 (0.77)	–0.08 (0.70)		
Min, median, max	1.00, 3.33, 5.00	1.00, 3.33, 5.00	–1.67, 0.00, 1.33	.443	
Diversity and ethics					
Mean (SD)	4.58 (0.42)	4.50 (0.44)	–0.08 (0.46)		
Min, median, max	4.00, 4.75, 5.00	3.00, 4.50, 5.00	–1.00, 0.00, 1.00	.145	
Community centeredness					
Mean (SD)	4.31 (0.50)	4.33 (0.57)	0.02 (0.52)		
Min, median, max	3.17, 4.17, 5.00	3.00, 4.17, 5.00	–1.17, 0.00, 1.00	.753	

Abbreviations: IPAS indicates Interprofessional Attitudes Scale; SD, standard deviation; min, minimum; max, maximum.

^aThe IPAS survey included 27 questions, with answers given on a five-point Likert scale, where 1 = strongly disagree and 5 = strongly agree. Each of the five domains contains a series of questions: teamwork, roles, and responsibilities contains nine questions; patient centeredness contains five questions; interprofessional bias contains three questions; diversity and ethics contains four questions; and community centeredness contains six questions. The IPAS scores were computed per the instruction on the survey; for more information, see Norris et al.⁹

^bThe min, median, max values in this column are based on the distribution of differences.

^cP value based on Wilcoxon signed-rank test of median difference equal to zero.

practice reflection, which allowed them to examine their biases toward patients with addiction, integrate new knowledge as part of continual practice development, and become transformative learners.¹⁰

This interim analysis had several limitations. First, this course was conducted at a single institution. Second, there was no control group. Third, about 70% of the student group were medical students. Fourth, teamwork improvements were likely constrained by the small number of other health professions students in the groups. Fifth, nursing students were not included in the interim analysis and report. Finally, there was a loss of paired data for the 17% of students who chose not to complete the surveys.

We will continue our assessment of this course, including (1) analysis of SAAS and IPAS survey responses one year after course implementation; (2) comparison of student and resident responses on the Liverpool Communication Skills Assessment Scale and motivational interviewing questionnaire (see above) to explore students' communication and motivational interviewing skills; (3) assessment of students' SAAS and IPAS survey responses based on the individual health profession program in which they are enrolled; (4) comparison of students' SAAS and IPAS survey responses between different health professions programs; and (5) comparison of medical students' SAAS and clinical performance examination scores for those who have completed the SUDs course versus those who completed a psychiatry clerkship prior to the course's creation to assess changes in attitudes and knowledge.

Starting in academic year 2016–2017, the SUDs course will include four additional elements: (1) Students will work in small interprofessional teams alongside psychiatry residents to lead group therapy

sessions for patients with SUDs; (2) students will participate in a volunteer event with a community organization focused on SUDs; (3) we will include a discussion on cannabis use disorder and its effects on mood and psychosis; and (4) we will explore ways to address students' attitudes toward permissiveness and nonstereotyping (as measured by the SAAS). Further, accelerated bachelor of science in nursing students will participate in the course beginning in July 2016.

Funding/Support: The project was funded by an internal research grant from Duke Academy of Health Professions Education and Academic Development from October 2015 through November 2016. Additional funding was provided by the Duke Division of Addiction in the Duke Department of Psychiatry and Behavioral Sciences. No financial support was received for this publication, and none of the authors have sources of financial support relevant to this publication.

Other disclosures: None reported.

Ethical approval: The project was approved by the Duke University Health System Institutional Review Board as exempted educational research.

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