Evaluation of a Faculty Development Program in Substance Abuse Education

JUDYANN BIGBY, MD, HENRIETTA N. BARNES, MD

Objective: To determine whether a faculty development program was effective in increasing clinical skills and the amount of substance abuse teaching of individual general medical faculty.
Design: Program participants were evaluated with a structured assessment before and several months after participating in a faculty development program in substance abuse education.
Participants: Eighty percent were general internal medicine faculty, who on average devoted 25% of their time to teaching. The remainder of the participants were family medicine, psychiatry, or other internal medicine faculty and nonphysician teachers.
Intervention: The participants attended a learner-centered, largely experiential faculty development program in substance abuse education to improve their clinical and teaching skills relevant to substance abuse among patients in the general medical setting.
Measurements and main results: Eighty-six percent of the participants completed the evaluation. The participants reported increased confidence in their clinical skills in recognizing substance abuse, presenting the problem to the patient, and referring the patient for treatment. The participants also reported improved attitudes toward patients and increased teaching about the management of the primary problem of substance abuse, but not at the expense of teaching about medical complications.
Conclusions: Clinically oriented, interactive faculty development courses in substance abuse education can contribute to increased confidence in clinical skills in substance abuse as well as teaching about substance abuse.
Key words: faculty development; substance abuse education.
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EVERY PRIMARY CARE PHYSICIAN should have the knowledge and skills to care for patients with alcohol and drug abuse problems. Not only is substance abuse one of the most common illnesses encountered in medical practice,[1–4] but more than 90% of the nation's 20 million alcoholic persons receive care solely from primary care physicians.[5,6] However, most primary care physicians have indicated that they do not feel competent to care for patients with substance abuse.[5] Members of three primary care specialties — general internal medicine, pediatrics, and family medicine — have cited a dearth of competent faculty as a major impediment to effective medical education in substance abuse.[7]

The Society of General Internal Medicine (SGIM) Faculty Development Program in Substance Abuse Education was developed specifically to train such faculty. We defined competence in substance abuse teaching as the ability to provide appropriate clinical training to medical students and residents. Primary care residents who have had supervised clinical experience during training express the most confidence in their clinical skills in caring for patients with substance abuse.[8] A faculty member comfortable in the management of patients with substance abuse problems is likely to provide better clinical supervision for residents and students. Modeling appropriate clinical skills may be more relevant to teaching about substance abuse than is the delivery of a fact-filled lecture. We believe that knowledge about substance abuse should support the development of clinical skills, and that clinically useful, positive attitudes toward patients with substance abuse should result from the acquisition of appropriate knowledge and skills.

We assumed that course participants would teach about substance abuse primarily in general medical settings. Since 18–20% of patients on inpatient medical wards and in ambulatory clinical settings have problems with substance abuse, there is ample opportunity for teaching about this problem.[1–4] We hypothesized that increased clinical skills would enable faculty to identify and take advantage of these teaching opportunities.

Successful teaching of adult learners requires identifying the learners' existing knowledge and skills and applying this expertise to the new topic.[9] By describing the primary disease of substance abuse as a chronic medical condition, we expected to help physicians apply their extensive knowledge of other chronic diseases, such as diabetes and heart disease, and their skills in managing these patients to the problem of substance abuse.

We describe the implementation and evaluation of the SGIM Faculty Development Program in Substance Abuse Education. We assessed: 1) changes in participants' knowledge of, attitudes toward, and clinical skills in substance abuse; and 2) the effects of the program on the amount and content of substance abuse teaching.

METHODS

Over a three-year period, 87 participants took part in the education program. General internal medicine faculty from academic institutions were recruited specifically for the program. Primary care faculty from other specialties were also welcomed. Participants were not required to pay tuition for the course but were

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Address correspondence and reprint requests to Dr. Bigby: Division of General Medicine, Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115.

responsible for their travel expenses. The courses were limited to 20–25 participants each. The three-day course was sponsored five times by academic medical centers in Boston; Philadelphia; Cleveland; Rochester, New York; and Los Angeles.

The educational goals of the SGIM program were:

- To help participants improve their knowledge of and clinical skills in treating patients with substance abuse.
- To help participants develop approaches to teaching about substance abuse in different clinical settings.
- To provide participants with the opportunities to develop continued learning and support in substance abuse.

The course content included basic concepts of addiction, screening and early diagnosis, primary care management, treatment modalities useful in the primary care setting, and teaching skills for primary care faculty. Course participants were asked to read clinically relevant material prior to the course and received a syllabus containing additional materials, an outline of topics covered, and an annotated bibliography.[10]

The program design reflected the emphasis on improving the clinical and teaching skills of individual faculty. The program employed primarily interactive teaching methods; less than 20% of the program was didactic. The didactic sessions were arranged as much to model effective teaching as to impart knowledge. Experiential activities central to the curriculum included role playing, case discussions, the use of simulated patients, and attendance at self-help group meetings. No course time was devoted explicitly to changing attitudes toward substance abuse.

We addressed the need for participants' ongoing education and support in the months following the three-day program by recruiting physicians from the participants' institutions or region as faculty for the courses. These faculty, who had expertise in substance abuse and/or small-group facilitation, would serve as an ongoing resource for course participants. Fifty-two percent of faculty participating in the five programs were from the local institutions sponsoring the program. Several participants from initial workshops were able to continue their formal training by serving as faculty in subsequent workshops with supervision by more experienced faculty.

We developed a course evaluation using components from established evaluation instruments, including the Substance Abuse Attitude Survey (SAAS),[11] the National Institute of Drug Abuse's knowledge test as modified by Lerner et al.,[12] and tools used in the evaluation of the Commonwealth Harvard Alcohol Research and Teaching Program.[13] After the evaluation was developed, the 65-item questionnaire was pretested in three groups — general internal medicine faculty with an interest and expertise in substance abuse, general internal medicine faculty without particular interest or expertise in substance abuse, and internal medicine residents. The knowledge section of the evaluation tool had not been validated previously. The "expert" general medicine faculty had significantly higher scores on the knowledge section of the evaluation than did the nonexperts (82% vs 61%, chi-square = 14, $p < 0.001$). The "experts'" scores on questions abstracted from the SAAS indicated more positive attitudes toward caring for and teaching about patients with substance abuse ($p < 0.01$).

Prior to receiving precourse reading material, the participants were asked to complete a precourse evaluation. The precourse evaluation included questions about their training and background, general teaching responsibilities, and opportunities for teaching about substance abuse. They were asked to rate their confidence in their clinical skills in substance abuse. Knowledge of and attitudes toward caring for and teaching about patients with substance abuse were tested with true/false, multiple-choice and clinical-management questions. We defined substance abuse as abuse of and/or dependence on alcohol and other drugs, including

TABLE 1
Participant Characteristics

	Responders* (*n* = 71, 82%)	Nonresponders† (*n* = 15, 18%)	p
Gender — male	41 (58%)	8 (53%)	NS‡
General internists	60 (87%)	9 (60%)	NS
From academic medical center	37 (52%)	3 (20%)	0.05
Ambulatory clinical site	40 (56%)	8 (53%)	NS
Percentage of time devoted to teaching	26%	28%	NS
Clinical responsibility for patients with substance abuse	11 (15%)	5 (33%)	<0.04
Precourse knowledge score§	17.8	19.0	NS
Precourse attitude score¶	0.87	0.87	NS
Training in substance abuse since residency	16 (23%)	1 (7%)	NS
Confidence in clinical skills‖			
Alcohol	52%	62%	NS
Other drugs	30%	51%	<0.01

*Responders completed both precourse and postcourse evaluations.
†Nonresponders completed only the precourse evaluation.
‡NS = not significant.
§Ranges for the precourse knowledge score were 10–23 for responders and 11–23 for nonresponders.
¶Ranges for the precourse attitude score were 0.61–0.93 for responders and 0.62–0.93 for nonresponders.
‖Percentage ranking self as very confident or confident (versus having some or no confidence).

TABLE 2

Responders' Knowledge about and Attitudes toward Substance Abuse

	Precourse	Postcourse	p
Knowledge score*	17.1 (±2.7)	19.8 (±2.1)	NS†
Attitude score‡	0.87	0.96	<0.01
Major impediments to teaching about substance abuse			
Lack of adequately trained teachers	53%	36%	0.07
Disease/patient characteristics	40%	56%	NS

*Ranges for the knowledge score were 10–23 precourse and 10–23 postcourse.

†NS = not significant.

‡Ranges for the attitude score were 0.61–0.93 precourse and 0.81–1.0 postcourse.

illicit drugs, psychoactive prescription drugs, and nicotine.

All participants who completed the three-day seminar received postcourse evaluations six to 12 months after attending the course. In addition to covering the questions outlined in the precourse evaluation, the postcourse evaluation included questions about substance abuse training after the course. Participants who returned the postcourse evaluation were given the answers to the knowledge questions. Individuals who did not return the evaluation were sent a reminder. A total of three postcourse evaluations were mailed to nonresponders. If there was no response after the third mailing, individuals were telephoned and reminded to send in the evaluation so that they could receive the answers to the knowledge questions.

Responders returned their postcourse evaluations seven to 33 months after the course (mean 14 months). The characteristics of the participants who returned their postcourse evaluations (responders) and those who did not (nonresponders) were compared. Precourse and postcourse results are described and compared only for responders.

Comparisons of discrete characteristics of responders and nonresponders as well as precourse and postcourse results were examined by chi-square analysis. Continuous variables were analyzed by Student's t-test.

RESULTS

Course Participants

Eighty-seven faculty attended the program and 86 (99%) completed the precourse evaluation. Most of the participants were general internal medicine faculty. The remainder of the participants were from diverse backgrounds, including family medicine (8%), internal medicine subspecialties (3%), and other specialties (psychiatry, psychology, nursing, and social work) (6%).

The responders and nonresponders were similar (Table 1), although the responders were more likely to be from academic medical centers, were less likely to have some responsibility for caring for patients with substance abuse, and expressed less confidence in their skills in treating patients with drug abuse.

Changes in Knowledge, Attitudes, and Teaching

Results of the postcourse evaluation demonstrated interesting patterns of change in knowledge, attitudes, and confidence in clinical skills. Differences in knowledge scores before and after the course were not statistically significant (Table 2). The responders demonstrated more positive attitudes toward patients with substance abuse after the course. In identifying the most important impediments to substance abuse teaching, before the course the responders identified a lack of adequately trained teachers, and after the course they identified characteristics of the disease or patient.

Following the course, the responders reported increased confidence in their skills in managing patients with substance abuse (Table 3). These changes in confidence were significant for three key skills in the primary care management of patients with substance abuse problems: recognizing the problem, discussing the diagnosis with the patient, and initiating a treatment plan for the patient.

Responders reported teaching about substance abuse in a variety of settings. Prior to the course, responders were more likely to teach about alcohol abuse than about other drug abuse. After the course, a significantly increased percentage of participants were teaching about abuse of both alcohol and other drugs. Teaching about both alcohol and other drugs increased in resident teaching conferences (Table 4). Teaching about drug abuse alone also increased significantly in one-on-one teaching during precepting of residents and students. The number of responders teaching in settings such as the emergency department, medical consultation service, and grand rounds was too small to document any changes in teaching about substance abuse.

TABLE 3

Responders' Confidence in Substance Abuse Management Skills (%)*

	Precourse	Postcourse	p
Alcohol abuse			
Recognize the diagnosis	39	82	<0.001
Present the diagnosis	62	93	<0.02
Initiate a treatment plan	52	93	<0.01
Other drug abuse			
Recognize the diagnosis	18	42	<0.001
Present the diagnosis	35	76	<0.001
Initiate a treatment plan	37	72	<0.001

*Percentage ranking self as very confident or confident (versus having some confidence or no confidence) in the skill.

TABLE 4

Teaching Activities of Responders*

	Precourse	Postcourse	p
Any substance abuse teaching			
Resident conferences	20 (33%)	45 (75%)	<0.001
Medical student conferences	16 (30%)	19 (36%)	NS†
Precepting resident	54 (87%)	63 (95%)	NS
Precepting medical student	45 (74%)	50 (81%)	NS
Drugs other than alcohol			
Resident conferences	8 (13%)	20 (33%)	<0.002
Medical student conferences	9 (17%)	7 (13%)	NS
Precepting resident	33 (53%)	52 (79%)	<0.001
Precepting medical student	24 (39%)	37 (60%)	<0.05

*Numbers in parentheses are the percentages of responders who teach about the topic indicated, as a percentage of the total number of responders teaching in that setting/format.

†NS = not significant.

TABLE 5

Content of Teaching about Substance Abuse

	Precourse	Postcourse	p
Medical complications	54 (84%)	55 (77%)	NS*
Acute problems	44 (67%)	51 (73%)	NS
Management of primary illness			
Alcohol abuse	46 (71%)	68 (96%)	<0.05
Other drug abuse	22 (34%)	45 (63%)	<0.05

*NS = not significant.

After the course, responders continued to teach abut medical aspects of substance abuse and increased their teaching about the management of substance abuse (Table 5).

DISCUSSION

We found that participation in the SGIM Faculty Development Program in Substance Abuse Education was associated with increased teaching about substance abuse, with increased emphasis on the primary disease. These changes in teaching were associated with a striking increase in the participants' perceived self-confidence in managing both patients with alcohol problems and those with other drug problems.

Expertise in the area of substance abuse reflects the acquisition of relevant knowledge, skills, and attitudes. The results of the evaluation raise some interesting questions about the relative importances of these three factors in teaching about substance abuse.

Knowledge about substance abuse did not improve after the course. In fact, the mean precourse knowledge scores were similar to the scores of the "expert" general internal medicine faculty who pretested the evaluation instrument. Either the evaluation tool was unable to discriminate when testing people with an "expert" range of knowledge or the course participants were a self-selected, highly motivated group of faculty. Whether general medical faculty without such motivation and knowledge would derive similar benefit remains an important question. The increase in participants' teaching activity, despite no change in their knowledge as measured in the evaluation, suggests that factors other than knowledge are important in clinical teaching about substance abuse.

Course participants reported a more significant increase in their confidence in managing patients with drug abuse other than alcohol than they did for alcohol alone, despite slightly more emphasis on alcoholism in the course curriculum. This finding may reflect the relative lack of confidence in managing patients with drug abuse compared with managing patients with alcoholism prior to the course. Another possibility is that the use of a common model of addition as a chronic disease enabled participants to apply their existing skills to the care of patients abusing alcohol as well as those abusing other drugs. The markedly increased confidence in clinical skills reported by our course participants suggests that interactive learning situations, particularly role playing and simulated patients, provide an educationally effective analog for actual clinical experience.

The improvement in participants' attitudes toward substance abuse is a somewhat surprising finding. There is considerable debate among educators about the need to teach explicitly about attitudes in an effort to improve them.[8, 14, 15] Our findings suggest that increasing faculty's confidence in their clinical skills, without devoting curriculum time specifically to improving attitudes, is associated with a change to more positive attitudes.

The increase in participants' teaching activities in substance abuse occurred despite no significant change in overall teaching responsibilities. The increase in teaching about drug abuse and alcohol abuse in the resident conference setting is particularly striking because course participants did not receive any ready-made curricular material through our program.

The content of participants' teaching activities included a significant increase in teaching about the primary disease of substance abuse. Participants maintained their high level of teaching about medical complications, suggesting that they developed an integrated approach to teaching about substance abuse or devoted more curricular time to substance abuse.

Effective teaching about substance abuse is an important topic in general medicine education. Caring for patients with alcohol or drug abuse and caring for patients with chronic diseases were among the five most important characteristics deterring medical students from careers in internal medicine.[16] Inadequate teaching about the care of these patients may contribute to the development of these attitudes. Furthermore, medical faculty have an obligation to prepare their students and residents to care for patients with one of the most prevalent conditions that they will encounter. Clini-

cally oriented, interactive faculty development courses in substance abuse education can contribute to increased confidence in managing patients with substance abuse as well as increased clinical teaching about substance abuse problems.

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