Increasing Tobacco Dependence Treatment Through Continuing Education Training for Behavioral Health Professionals

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Objective: Few continuing education programs to train behavioral health professionals to deliver tobacco treatment services have been described and evaluated.

Methods: The effectiveness of two-day training on changing practice was examined by review of clinical charts from 20 clinicians who attended in 2012. Ten medical records were randomly selected for review from each clinician's outpatient practice at a large behavioral health system. Five charts from smokers seen within six months before and after training were reviewed per clinician, for a total of 200. Records were electronically searched on "cigarette," "nicotine," "tobacco," "quit," "smoking," and "smoke." Results were compared via chi square tests (all $p<.05$).

Results: Almost half of the smokers indicated that they were interested in quitting, although baseline rates of tobacco use treatment were very low. Documentation of tobacco use significantly increased between baseline and posttraining, both on the problem list (35% versus 74%) and treatment plan (20% versus 60%). Also posttraining, clinicians advised significantly more outpatients to quit (9% versus 36%) or referred them to individual or group counseling. Discussion of nicotine replacement was documented more frequently in charts (10% versus 31%), and prescriptions for tobacco treatment medications increased significantly in the posttraining period, although overall prescribing remained low. The proportion of patients making quit attempts also significantly increased in the posttraining period (10% versus 39%), suggesting that providers were delivering more tobacco treatment than was reflected in charts.

Conclusions: An intensive training program for behavioral health professionals increased tobacco treatment and patient quit attempts. Strategies beyond training may be needed to enhance prescribing by these practitioners.

Psychiatric Services 2015; 66:21–26; doi: 10.1176/appi.ps.201300523

Although public health interventions have resulted in decreased smoking rates in the United States general population over the past 50 years, smokers with mental illness have not benefited as greatly from these efforts. Smoking rates among individuals with a mental illness or substance use disorder are at least double those of the general population (1,2). Some estimates are that two-thirds of current cigarette smokers have a past or present behavioral health disorder, and there is evidence that this group consumes a sizeable portion of the tobacco sold in the United States (3,4). Individuals with mental illness suffer many consequences of tobacco use, including life spans shortened by up to 25 years due to excess mortality from cardiovascular disease (5,6). Despite these statistics, smokers with mental illness have less access to tobacco dependence treatment across the health care spectrum (7,8), specifically in the behavioral health setting. A recent review of nine community mental health sites revealed that less than half of clinicians reported even asking their patients about smoking (9).

Removing barriers to accessing tobacco dependence treatment by disseminating clinical practice guidelines and increasing treatment capacity in the behavioral health care setting is essential (10,11). Studies have shown that for health professionals outside of behavioral health care, training in tobacco dependence treatment techniques, including counseling and helping smokers set quit dates, results in increased treatment (12). None of the 17 studies in Carson and colleagues' review (12) targeted psychiatrists or behavioral health professionals, reflecting the few continuing education (CE) opportunities for them (13). Intensive five-day tobacco dependence training designed to prepare participants to become certified tobacco treatment specialists do not focus on mental health treatment providers' needs and may require commitment of too much time for physicians to attend. Although some written and online programs exist, professionals

prefer live training because it offers increased opportunity for active learning in order to practice skills, ask questions, and interact with training faculty (14).

Our group has conducted live CE training on tobacco dependence for behavioral health professionals since 2006 (15). The training is typically given over two days with credit hours for physicians and other professionals in related disciplines (including nursing, counseling, and social work).

The curriculum has been described in detail elsewhere (15) but includes assessment and treatment of smokers, including a comprehensive review of behavioral and pharmacologic treatments. Techniques on how to work with less-motivated smokers and to develop treatment plans for smokers with behavioral health conditions are also included. Although the curricula are tailored to incorporate current knowledge on best practices for treating smokers with mental illness, we use recommendations from clinical practice guidelines for treating smokers in the general population in areas where specialized knowledge or evidence is lacking (16). The training faculty includes one psychiatrist, two doctoral-level psychologists, and at least two master's-level counselors who are also certified tobacco treatment specialists. Each of the didactic presentations is followed by a question-and-answer session, and several sessions involve interactive learning through case studies, small-group problem solving, and skills practice sessions.

Prior evaluation of this training revealed that baseline knowledge of tobacco dependence treatment among participants assessed via a pretest is typically poor; psychiatrists typically do not score better than nonmedical behavioral health professionals (about 50% correct) on questions about evidence-based pharmacotherapy for tobacco dependence, the duration of nicotine withdrawal, and tobacco's effect on the cytochrome P450 1A2 system (14). The two-day CE training has been held 15 times since its inception in 2006, for more than 450 participants. Knowledge acquisition and more favorable attitudes about treating tobacco usage have been associated with attending the training (14). The purpose of this study was to do more extensive evaluation of the training experience, because the acquisition of knowledge does not ensure implementation or changes in practice. Specifically, we wished to see whether behavioral health professionals who attended the training provided more tobacco dependence treatment to their clients compared with their baseline practices.

METHODS

We conducted a chart review of persons treated by behavioral health professionals affiliated with a large university-based behavioral health agency who attended intensive two-day training called "Treating Tobacco Dependence in Mental Health Settings." Attendees earned 16 hours of free CE credits as an incentive for participation. Any health professional who worked at any of the 30 sites of this statewide behavioral health agency was invited to attend the training program that was held on March 31 and April 14, 2012. We used an implied consent procedure in which we invited trainees to participate in an evaluation study with minimal risk. Although training participants consented to a training evaluation study, they were not informed that we would conduct chart reviews because such knowledge could influence their practice. The institutional review board of the Rutgers University–Robert Wood Johnson Medical School approved the protocol.

During registration on the first training day, each participant completed an 11-item survey that we have described previously (14). Survey questions addressed general knowledge about effectiveness of treatment interventions, self-reported tobacco treatment practices, barriers to tobacco dependence treatment implementation, and attitudes about tobacco users. Participants also completed a 15-item multiple-choice pretest. The test included topics from all the training modules, including assessment of level of nicotine dependence and knowledge of evidence-based treatments and biological links between smoking and mental illness. At the conclusion of the second training day, the same 15-item test (posttest) was completed to assess changes in knowledge.

A total of 39 behavioral health professionals attended the training, although only 20 clinicians (13 psychiatrists; six registered nurses [RNs], and one advanced practice registered nurse [APRN]) who worked in the outpatient treatment setting were eligible for chart review; the remaining participants lacked a clinical caseload that could be reviewed because they worked in administration (3), housing services (13), or crisis services (3). For each identified clinician's active caseload, ten randomly selected outpatient charts were reviewed. Five of those charts were reviewed for the pretraining period. Eligible candidates for chart review included tobacco users who were seen for at least three visits by the identified clinician between August 2011 and January 2012. The same procedure was used to review five charts for the posttraining period. Eligible candidates for chart review included tobacco users who were seen by the identified clinician for at least three visits between April and September 2012.

Randomly selected cases were provided by case number to the study investigator and then screened for eligibility criteria. No patient identifiers were collected in the chart review process, and cases could be reviewed only once even if the patient received treatment from more than one clinician in the study. Rutgers University–University Behavioral Health Care instituted a comprehensive electronic medical record (EMR) in the year 2000. All chart reviews were done electronically, not in printed form. To limit access to sensitive behavioral health information in a computerized medical record, all chart reviews were conducted by JMW. Although clients filled prescriptions at community-based pharmacies, clinicians updated patient medications through an electronic medication reconciliation list. After charts were identified as eligible, clinical progress notes written by the identified clinicians were searched electronically with the following keywords: "cigarette," "nicotine," "tobacco," "smoking," and "smoke." In addition to progress notes, the problem list, baseline assessment, multidisciplinary treatment plan, and

medication list were also reviewed. A total of 200 patient charts were reviewed for this study (100 pretraining and 100 posttraining).

Pre- and posttest scores were compared with paired-sample t tests. Independent-sample t tests and chi square tests were used to compare the baseline differences in sociodemographic variables between patients evaluated before or after training. Comparisons of variables of categorical type (chart review results) were evaluated with chi square tests. All statistical analyses were performed with SPSS, version 19.0.

RESULTS

Characteristics of Clinicians

Twenty clinicians (13 psychiatrists, six RNs, and one APRN) who worked in the outpatient treatment setting were eligible for chart review. All worked in outpatient or partial-hospitalization settings at the same university-based behavioral health agency, which included six program sites throughout the state of New Jersey. These six clinical sites have different administrators and serve more than 23,000 clients per year. Seventeen clinicians completed the pretest and posttest. Participants had significant increases in posttest scores, indicating good knowledge acquisition. Mean±SD percentages of items correct were 47.8%±13.0% before training and 78.0%±11.5% after training ($t=-8.4$, $df=16$, $p<.001$).

Survey of Attitudes and Beliefs About Treating Tobacco Use

Eighteen of the 20 clinicians who were eligible for the chart review completed a survey before training. Participants were asked to rate various barriers to helping patients stop smoking (Table 1). The two most endorsed barriers preventing these clinicians from assisting patients to stop smoking were that patients had more immediate problems to address (89%) and that patients were not motivated to quit (83%). Subsequent sections of the survey asked participants to report attitudes and beliefs about tobacco use and treatment as well as rate the frequency of their current practices in helping patients stop smoking. Most (89%, N=16) endorsed that smoking is a chronic, relapsing disorder; however, some acknowledged that they did not know that use of nicotine replacement medication increases success in quitting (17%, N=3) and is cost-effective (44%, N=8).

Chart Review Results

Patient characteristics. A total of 200 patient charts were reviewed for this study (100 pretraining and 100 posttraining). Because the same clients were not reviewed in the pre- and posttraining chart reviews, we compared patient characteristics of the two groups. Smokers whose charts were reviewed in the pretraining sample were not significantly different from the smokers whose charts were reviewed in the posttraining sample in terms of gender, primary psychiatric diagnosis, or substance abuse history (Table 2); however, the distribution of cigarettes smoked per day was significantly different between groups. More than 60% of smokers in both samples had a past or present substance use disorder documented on the problem list within the EMR. As part of the initial psychiatric assessment, clients who used tobacco were asked if they had an interest in quitting. Of those who had a documented response to this question (N=117), 43% answered yes (interested in quitting) in both the pretraining and posttraining samples.

Sixty-seven percent of the sample (N=133 of 200) had at least one medical condition caused or worsened by tobacco use, and up to three tobacco-related medical conditions were recorded for each patient. The most frequent medical conditions were hypertension (N=63); respiratory diseases (N=48), including chronic obstructive pulmonary disease; hyperlipidemia (N=31); diabetes (N=34); and heart disease (N=20). Other conditions noted included the following: chronic pain (N=13); peptic ulcer or gastritis (N=11); immune disorder, such as HIV, multiple sclerosis, or lupus (N=8); cancer (N=8); glaucoma (N=5); early menopause (N=5); and infections, such as pneumonia or sinusitis (N=3).

Documented tobacco dependence treatment practices before training. Baseline rates of tobacco dependence treatment practices as assessed during the pretraining period are listed in Table 3. Rates of all practices were low with the exception of asking about current tobacco use and amount used. Ninety-eight percent of pretraining charts had brief documentation of tobacco use, which is a required part of the initial clinical assessment. Use of other tobacco products (aside from cigarettes) was rare, and most charts documented the amount smoked, in cigarettes per day. Use of other tobacco dependence treatment practices was much lower compared with rates for completion of assessments. Documentation of tobacco use on

TABLE 1. Significant barriers clinicians mentioned in pretraining survey on treating tobacco use among behavioral health patients[a]

Item	N	%
Patients have more immediate problems to address.	16	89
Patients are not motivated to quit.	15	83
Other practice priorities reduce my ability to address smoking with my patients.	12	67
Time with patients is limited.	11	61
Too few cessation programs are available.	11	61
Patients usually fail to quit.	10	56
Staff are unfamiliar with interventions to help smokers quit.	10	56
My experience in intervening with smokers is limited.	9	50
Reimbursement for tobacco counseling is limited.	8	44
Colleagues do not believe in the efficacy of cessation interventions.	2	11
Administrators do not believe in the need for cessation interventions.	1	6

[a] N=18 training participants (data missing for 2 participants)

TABLE 2. Characteristics of 200 behavioral health clinic smokers before and after clinicians received smoking cessation training[a]

Characteristic	Chart analysis (N and %)		
	Pretraining (N=100 charts)	Posttraining (N=100 charts)	p
Cigarettes smoked per day			.010
≤10	53	42	
11–20	28	49	
≥21	14	5	
Missing or not recorded	5	4	
Gender			.594
Male	49	47	
Female	50	50	
Missing or not recorded	1	3	
Primary diagnosis			.338
Psychosis	41	43	
Depression	32	23	
Bipolar disorder	18	17	
Anxiety	8	11	
Personality or other disorder	1	6	
Past or current substance abuse (yes)	65	69	.547
Interest in quitting[b]	18	32	.984

[a] Values indicate N and percentage, unless otherwise noted. Different sets of charts were reviewed before and after clinician training.
[b] A total of 117 patients expressed an interest in quitting, 42 (43%) of whom were in the charts reviewed pretraining and 75 (43%) in the posttraining charts.

the patient's problem list and treatment plan was 35% and 20%, respectively. Any mention of tobacco use was documented in 29% of charts in the progress notes section. Twelve percent of patients were referred to a group treatment (education or quit focused) and 10% were receiving individual treatment from a member of the behavioral health treatment team. Referrals to other providers outside of the Rutgers University–University Behavioral Health Care system (7%) or the telephone quit line (0%) were also low. Only 9% were advised to quit, as documented somewhere in the chart.

TABLE 3. Documented tobacco treatment practices before and after 20 behavioral health clinicians attended smoking cessation training[a]

Practice	Pretraining (count and %)	Posttraining (count and %)	p
Asked about tobacco use (assessment)	98	100	.155
Asked if interested in quitting	44	83	<.001
Amount of tobacco use assessed	95	98	.248
Tobacco noted on problem list	35	74	<.001
Tobacco use in progress notes	29	52	<.01
Tobacco use in treatment plan	20	60	<.001
Advised to quit	9	36	<.001
Referred to group education or treatment	12	40	<.001
Receiving individual education or treatment	10	34	<.001
Referred to another provider	7	16	<.05
Referred to quit line	0	3	.081
Tobacco noted to be problem for patient	7	29	<.001
Nicotine replacement discussed	10	31	<.001
Tobacco treatment medication prescribed	3	14	<.01
Patient trying to quit now	10	39	<.001

[a] A set of 100 charts was reviewed before training, and another set of 100 charts was reviewed after training.

Self-report compared with practices documented at baseline. We compared clinicians' survey responses about their tobacco use treatment practices with their pretraining baseline rates. Providers could report that they "never," "sometimes," or "usually" used a given practice. Providers self-reported higher use of practices than was observed in the chart review for many of the activities. For example, all providers indicated that they advised patients to quit "usually" or "sometimes," although less than 10% of chart entries pretraining showed evidence of this (Table 4). Ninety-four percent indicated that they referred smokers to another provider for treatment, yet chart review indicated that only 7% of patients received a referral. Seventy-seven percent of participants indicated that they referred patients to a quit line, but there was no evidence of this in any charts. Eighty-three percent indicated that they discussed use of tobacco treatment medications, although this was documented in only 10% of chart entries pretraining.

Tobacco dependence treatment practices after training. Documentation of all assessed tobacco dependence treatment practices increased in the posttraining period. Significantly more patients had tobacco listed on the problem list (74% post versus 35% pre) and treatment plan (60% post versus 20% pre). Documentation of tobacco anywhere in the progress notes increased (52% post versus 29% pre). More patients were advised to quit, and referrals to other providers outside of the behavioral health provider system also increased. Significantly more patients in the posttraining period were referred for group counseling (40% post versus 12% pre) or received individual counseling (34% post versus 10% pre) for tobacco use by a member of the treatment team. Documentation that tobacco use was a problem for the patient increased. Discussion and prescription of tobacco treatment medications increased significantly between the pretraining and posttraining periods, although overall rates of use of these medications remained low. Documentation of patients trying to quit also significantly increased in the posttraining (39% versus 10%) period, suggesting that providers were giving more tobacco dependence treatment than was reflected even in the chart entries.

DISCUSSION

This study was the first to evaluate how training behavioral health professionals through a CE curriculum affects the delivery of tobacco dependence treatments in the behavioral health setting. This preliminary report indicates that subsequent to attending a two-day CE curriculum, "Treating Tobacco Dependence in Mental Health Settings," psychiatrists

and nurses increased their tobacco dependence treatment practices. This is remarkable, given the numerous barriers that these same clinicians reported in their pretraining survey. Limitations of the study include the lack of randomization or a control group and the small number of clinicians the study included. It is also notable that no tobacco policy initiatives were undertaken at the time of this project (for example, these facilities do not have tobacco-free treatment grounds) that could have influenced clinical practice. Although clinicians who chose to attend could have been more willing than other clinicians to address tobacco use and thus reflected a biased sample, they were unaware that their clinical practices would be evaluated by chart review.

Similar to our prior evaluation study, in this study baseline knowledge of assessment and treatment of tobacco dependence was poor among trainees and improved after training. In addition to having a knowledge deficit, many participants overestimated the frequency at which they used tobacco dependence treatment practices compared with an actual sample from their caseload. The literature indicates that other medical practices, including adherence to medical guidelines and rates of cancer screening, show evidence of similar self-report bias (17,18). Chart review is a commonly used technique for assessing quality of health care delivery. Limitations include recording bias, illegibility, and missing reports, but these can be reduced with EMRs, which standardize documentation (19,20). Chart review is also considered a reasonable way to assess physician training.

Responses to some participant survey items suggested a bias against helping smokers and were inconsistent with actual patient information. For example, many providers felt that patients were not motivated to quit (44%) and that the low motivation of patients was a significant barrier to their intervening (83%). Clinicians frequently report that low patient motivation is a barrier to providing cessation services (9). What was most interesting in this study was that the same patients seen by these clinicians reported fairly high levels of motivation, as assessed during the initial evaluation. Although the measure was simple ("Are you interested in quitting?"), almost half of tobacco users in both the pretraining and posttraining samples responded yes. This is an important discrepancy that suggests that clinicians are not adequately assessing and understanding patients' desire to change tobacco use. Consistent with other studies, tobacco users in the behavioral health setting are interested in tobacco use treatment (21). This study also supports that the need for treatment is great in this setting, given the high frequency of tobacco-related medical conditions.

This study did not focus on the smoking-cessation outcomes of the patients involved, but it is interesting that documented quit attempts in the progress notes increased significantly in the posttraining period. A limitation of the study was that quit attempts were self-reported and not strictly defined or validated by the clinician. The mention, however, of any quitting behavior, even unsuccessful attempts, is remarkable given that progress notes in the EMR are unstructured (free text) and suggests that more treatment was being delivered, and not merely documented, in the posttraining period. Some (22) but not all (12) prior studies of training health professionals in general medical and dental settings have found evidence of an effect for increased smoking abstinence after the intervention. Future evaluations of training for behavioral health professionals should evaluate more rigorous changes in tobacco use or cessation rates. The long-range effect of this training (beyond six months) on clinical practices cannot be determined because it was not assessed.

TABLE 4. Self-reported compared with documented baseline practices of 20 behavioral health clinicians who received smoking cessation training

Practice	Self-reported (N=18 clinicians)[a]		Documented pretraining (count and % in 100 charts)
	Count	%	
Ask about tobacco use at assessment	18	100	98
Ask if interested in quitting	17	94	44
Advise quitting	18	100	9
Refer to another provider	17	94	7
Refer to quit line	14	77	0
Nicotine replacement discussed	15	83	10

[a] Reported as "sometime" or "usual" practice

Rates of prescribing tobacco treatment medications, although increased from baseline, remained very low. Reasons for this are unclear but could be related to poor insurance coverage for nicotine replacement medications in New Jersey. Medicaid is the primary purchaser of health insurance for people with psychiatric disabilities, yet coverage for nicotine replacement medications has been limited in New Jersey because of many restrictions, such as lifetime benefit maximums. This is ironic because the state's Medicaid program spends $309 million annually on tobacco-related health care costs (2). Insurance, however, may not be the only barrier, given that other studies of health care professionals also showed that training did not change rates of providing tobacco treatment medications (12). Techniques other than training that promote outreach visits to prescribers, such as medical detailing, may be useful for these behaviors specifically (23).

CONCLUSIONS

In this study, behavioral health professionals lacked knowledge about evidence-based practices for treating tobacco use and overestimated the frequency at which they deliver tobacco dependence treatment. An intensive training program for behavioral health professionals increased tobacco use treatment and patient quit attempts. Documentation of all assessed tobacco dependence treatment practices increased in the posttraining period in this chart review study. Strategies beyond training may be needed to enhance prescribing by these practitioners.

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The authors thank Nancy Szkodny and Julie Morgano for their assistance with this project.

Dr. Williams has received unrestricted continuing medical education grants from Pfizer. Dr. Williams and Dr. Steinberg have received research grants from Pfizer. The other authors report no competing interests.

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