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Tobacco cessation services in addiction treatment: What do clients say?

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Abstract

Objective: Specialty addiction programs treat person addicted to alcohol, opioids, stimulants and other drugs. This study identified the proportion of addiction program clients that received tobacco-related services, and factors associated with receipt of such services.

Methods: 2,119 clients in 24 programs were surveyed in 2015 and 2016 for receipt of services aligning with 3 of the 5 A's of tobacco cessation: Ask, Advise, Assist. Multivariate analyses examined factors associated with receipt of each service.

Results: Most clients (76%) were asked about smoking. Among smokers (n=1,630), 53% were advised to quit, 41% received counseling, 26% received cessation medication, and 17% received counseling and medication. Clients were more likely to receive tobacco-related services if they wanted help quitting smoking, or were enrolled in programs with tobacco-free grounds.

Conclusion: These correlational findings suggest that increasing client motivation to quit, and implementing tobacco-free grounds policies, may increase tobacco-related services in addiction treatment.

Keywords: tobacco cessation services, addiction treatment

Over 19 million Americans are in need of treatment for abuse of alcohol, illicit drugs, or prescription drugs. Of those, 3.8 million receive addiction treatment annually in self-help settings, primary care, or specialty treatment programs (1). Among persons in addiction treatment, smoking is a prevalent comorbid health risk, with smoking rates consistently above 70% from 1987 through 2015 (2). Addiction treatment services reach 2.85 million smokers annually, or 7.5% of all U.S. smokers (3). The burden of tobacco-related illness is substantial, as persons receiving addiction treatment are nearly twice as likely to die of tobacco-related causes than those in the general population (4). Many smokers in addiction treatment want to quit smoking (5), and quitting smoking may improve addiction treatment outcomes (6).

These findings have prompted investigators to explore tobacco cessation services in addiction treatment, where barriers to such services include lack of staff training and a culture where smoking is often normalized (6). The 5 A's offer an evidence-based smoking cessation intervention: *Ask* about tobacco use; *Advise* users to quit; *Assess* willingness to make a quit attempt; *Assist* those willing to quit through pharmacotherapy or referring to counseling; *Arrange* for follow-up one week after the quit date (7).

This paper describes tobacco cessation services received by clients enrolled in a national sample of addiction treatment programs. We explored whether clients reported being asked, advised, or assisted with smoking cessation in their treatment program, and examined factors associated with receipt of those services.

Methods

Twenty-four publicly-funded addiction programs participating in the NIDA Clinical Trials Network (CTN) were selected in 2013, including 7 outpatient, 10 residential and 7 methadone programs. Publicly-funded programs receive more than 50% of funding from government sources, and serve low-income populations. Methadone programs provide daily on-site methadone administration for opioid use disorder. Non-methadone outpatient and residential programs typically treat all substance use disorders. Outpatient programs involve 1-2 visits per week, while residential programs involve structured daily treatment with clients living on site (8). Our team visited each program in 2015 and 2016, recruiting up to 50 clients per program per year for an anonymous online survey. The 2015 sample (n=1,125) represents 17% of all 6,801 active clients in these programs when site visits were conducted. The 2016 survey asked participants if they recalled taking the survey in the previous year, to remove probable duplicate cases. All who provided informed consent also completed the survey and received a $20 gift card. Program directors were interviewed by phone about program tobacco policies. Program selection, participant recruitment, and coding of tobacco-free grounds are reported elsewhere (2). Study procedures were approved by the University of California, San Francisco Institutional Review Board.

In addition to demographics, participants reported a number of independent variables, including the number of days in the past month when their physical health or mental health was not good (9). Four categories were defined by <14 days of physical and mental distress (low health distress), ≥14 days of “physical health distress”, ≥14 days of “mental health distress”, and ≥14 days of both “physical and mental health distress.” Current smoking was defined as having smoked at least 100 cigarettes in lifetime, and self-report as a current smoker (https://www.cdc.gov/nchs/nhis/tobacco/tobacco_glossary.htm). Current smokers reported number of cigarettes smoked per day (CPD), whether they made a quit attempt in the past year, were thinking of quitting in the next 30 days (10), and wanted help with quitting. Smokers estimated the chance (0-100%) they would get lung cancer, have trouble catching their breath, or have a heart attack; the mean of these percentages represented perceived health risk of smoking (11). Each survey was coded to whether the participant’s program had tobacco-free grounds or not.

These independent variable were selected because quit attempts are associated with both readiness to quit and receipt of cessation services in addiction treatment (5), becauses persons with health concerns are more likely to quit smoking while in addiction treatment (12), and because implementation of tobacco-free grounds is associated with increased cessation services reported by clients (2).

For tobacco service outcomes, clients reported whether any staff member had *asked* about their smoking or *advised* them on how to quit smoking. To assess how smokers were *assisted* with quitting, we used four measures: Any Referral, Any Counseling, Any Medication, and Counseling and Medication, as recommended by Clinical Practice Guidelines (7). Receipt of a referral to a smoking cessation specialist (yes/no), or smoking Quitline (yes/no) was coded as having received *Any Referral*. Participants who reported having attended a cessation support group (yes/no), or that their counselor encouraged them to quit smoking or arranged an appointment to discuss quitting (both items dichotomized as Never, Occasionally vs. Often, Very Often, Always), were coded as having received *Any Counseling*. Receipt of nicotine replacement therapy (NRT) or other cessation medication (bupropion, varenicline) was coded as having received *Any Medication*. Last, we combined the *Counseling and Medication* measures to assess proportion who received this recommended combination of services (7).

Comparing the 2015 and 2016 samples showed few differences on demographic, smoking behavior, or tobacco service measures. Thus, we collapsed across time and tested factors associated with tobacco service outcomes using multiple logistic regression. Collapsed across years, after removing 145 possible duplicate cases and 14 with indeterminate smoking status, the sample size was 2,119.

The first outcome, whether clients were asked about smoking, included smokers (n=1,633) and non-smokers (n=486). Smoking variables were not

available for non-smokers, so the model included current smoking status, demographics (age, gender, race/ethnicity, education, time in treatment, treatment type, health distress), and tobacco-free grounds status. Analyses accounted for nesting of participants within program via generalized estimating equation models for correlated data. For the health distress measure, low health distress was used as the referent. The remaining five outcomes applied to smokers only. Each model was the same as that above, but without smoking status and with the addition of smoking characteristics (CPD, quit attempt in the past year, thoughts of quitting, health risk perception, wanted help quitting). The rate of missing data was <1% for each independent variable except for health distress (3%), and ≤5% for all multivariate models. Missing data was not expected to impact the results. Analyses were conducted using SAS version 9.4.

Results

Participants (N=2,119) had a mean age of 38.2±11.9, 47% were women, and 79% had a high school diploma/GED. The sample included White (57%), African American (17%), and Hispanic (13%) participants, with fewer persons of Native American (5%), Asian/Pacific Islander (2%), or Other race/ethnicity (7%). Most (69%) reported low health distress, while fewer reported mental health (17%) or physical health distress (4%), or both (10%). Participants were recruited from outpatient (31%), residential (40%) and methadone (29%) programs.

Most (77%) were current smokers, with a mean CPD of 13.2±8.5. Half (50%) had made a quit attempt in the past year, 26% were thinking of quitting in the next 30 days, and mean perceived health risk from smoking was 47±25%. Many (40%) wanted help with quitting smoking, and 28% were in programs that had tobacco-free grounds. The 2016 sample included fewer methadone clients (χ^2=7.3, df=2, p=.026), and reported shorter time in treatment than in 2015 (64.3±146.1 day v. 86.4±162.8 days; t=3.3, df=2,112, p=.001), and these variables were included in the analysis.

Most clients (76%) had been asked their smoking status and, among smokers, 53% had been advised on how to quit. Smokers reported receiving any referral (46%), any counseling (41%), any medication (26%), and both counseling and medication (17%).

Participants with both mental and physical health distress had lower odds of referral to tobacco-cessation services (OR=0.69, CI=0.53–0.90; Table 1). Smokers thinking of quitting in the next 30 days had greater odds of receiving cessation counseling (OR=1.43, CI=1.11–1.84). A seen across the bottom of Table 1, smokers who wanted help with quitting, compared to those who did not, had greater odds of receiving every tobacco-related service (Table 1). Similarly, participants in programs with tobacco-free grounds, as compared to those in programs without, had greater odds of receiving three of the five services measured.

These data may also be interpreted using predicted probabilities, or the probability of receiving a service when the value of the independent

variables are known (data not shown). For a smoker who did not want help with quitting and was not in a tobacco-free grounds program, the probability of receiving advice on how to quit was 49%. This probability rose to 60% if the smoker wanted help with quitting, and to 72% if the same smoker was in a tobacco-free grounds program. Similarly, the probabilities of receiving any tobacco-related counseling, given the same set of conditions, are 32%, 46%, and 62%. Last, the probabilities of receiving tobacco cessation medication, in the same three instances, are 14%, 29%, and 68%.

Discussion

Clients who wanted help with quitting smoking reported higher odds of receiving tobacco cessation services. It is possible that clients request cessation services, which are then provided. Increasing client interest in quitting might be done through motivational interviewing (13) or patient empowerment interventions (14), both of which are shown to be effective among smokers younger than 50 years who, as in our sample, may not have serious health concerns. Smokers in programs with tobacco-free grounds also had higher odds of being advised to quit, and of receiving counseling and medication. This is consistent with literature showing increased use of tobacco-related services, and greater clinician support of client smoking cessation in addiction treatment programs with tobacco-free grounds (2). Availability of tobacco cessation services may also be greater in programs

with tobacco-free grounds. Barriers to tobacco-free grounds policies include staff misconceptions about smoking cessation during addiction treatment. However, staff training may address these barriers and increase client receipt of tobacco services (6). Increasing client motivation to quit and increasing adoption of tobacco-free grounds are feasible, low technology, and low-cost strategies to address smoking in addiction treatment.

Study limitations include generalizability due to lack of information about non-respondents and because programs were recruited through the NIDA CTN are shown to differ from non-CTN programs (15). The program sample included only publicly-funded programs, and participant samples were either census-based (in residential programs) or convenience samples (in other programs). The cross-sectional design does not permit causal interpretation. The survey did not collect data on psychiatric diagnoses, which may be associated with receipt of tobacco services. Receipt of tobacco-related services was based on self-report and not corroborated by chart review. The study did not collect data on availability of tobacco services in participating programs.

Conclusions

Among clients recruited from addiction programs within a national research network, smoking behavior occurred at an epidemic rate. Robustly associated with receipt of tobacco services were whether the client wanted to quit smoking, and whether the program had tobacco-free grounds.

Treatment programs may address client smoking, in part, through interventions that increase motivation to quit. Agencies that fund, license and regulate such programs should require tobacco-free grounds policies. These steps are necessary to reduce smoking, and related morbidity and mortality, among those who have sought healthcare in our addiction treatment systems.

Highlights

- This study examines factors associated client receipt of tobacco cessation services in their current addiction treatment program
- Whether clients wanted to quit smoking, and whethe addiction treatment programs had tobacco-free grounds, were robustly associated with client receipt of tobacco cessation services

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Table 1. Associations of tobacco-related variables and receipt of tobacco cessation services among clients enrolled in 24 addiction treatment programs[1]

	Outcomes											
	Ask[3]		**Advise[4]**		**Referral[4]**		**Counseling[4]**		**Medication[4]**		**Counseling & medication[4]**	
Variables[2]	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
Current smoker	0.87	0.62–1.22	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Health distress												
Low health distress (Ref)	1		1		1		1		1		1	
Mental health distress	1.30	0.94–1.79	0.83	0.62–1.12	0.85	0.61–1.19	0.89	0.69–1.15	0.85	0.66–1.09	0.82	0.59–1.13
Physical health distress	1.49	0.95–2.33	1.26	0.69–2.30	1.02	0.65–1.59	1.19	0.73–1.93	0.63	0.35–1.13	0.83	0.42–1.63
Mental and physical health distress	0.95	0.64–1.41	0.75	0.55–1.01	**0.69**	**0.53–0.90**	1.05	0.77–1.43	0.70	0.47–1.05	0.83	0.57–1.19
CPD	N/A	N/A	1.00	0.99–1.02	1.01	1.00–1.03	1.00	0.98–1.01	1.01	0.99–1.03	1.01	0.99–1.03
Quit attempt (past year)	N/A	N/A	1.17	0.95–1.43	1.12	0.88–1.42	1.06	0.81–1.40	1.04	0.84–1.29	1.03	0.75–1.42
Thinking of quitting in next 30 days	N/A	N/A	1.14	0.90–1.44	1.18	0.92–1.52	**1.43**	**1.11–1.84**	1.32	0.91–1.91	1.46	0.98–2.18
Health risk of smoking to self	N/A	N/A	1.00	1.00–1.01	1.00	1.00–1.01	1.00	1.00–1.01	1.00	1.00–1.01	1.00	1.00–1.01
Wanted help quitting smoking	N/A	N/A	**1.55**	**1.25–1.92**	**1.93**	**1.50–2.48**	**1.84**	**1.40–2.40**	**2.64**	**2.00–3.48**	**2.80**	**1.95–4.04**
Tobacco-free grounds	**1.49**	**1.08–2.05**	**1.76**	**1.15–2.69**	1.45	0.97–2.15	**1.90**	**1.05–3.43**	**5.21**	**1.12–24.26**	3.03	0.86–10.63

[1] Adjusted for age, gender, race/ethnicity, education, time in treatment, treatment type, and nesting of clients within program; significant associations ($p \leq 0.5$) are bolded

[2] Most independent variables had 2 categories (yes, no), for which no is the reference category. CPD and Health risk of smoking to self were continuous, and Health distress had 4 levels, for which low health distress is the reference category.

[3] Included all participants

[4] Included smokers only