Published in final edited form as:

J Psychoactive Drugs. 2007 December ; 39(4): 423–433.

Staff Smoking and Other Barriers to Nicotine Dependence Intervention in Addiction Treatment Settings: A Review

Joseph Guydish, Ph.D.^{*}, Emma Passalacqua, B.A.^{**}, Barbara Tajima, Ed.M.^{**}, and Sarah Turcotte Manser, M.A.^{**}

^{*}Professor of Medicine, Institute for Health Policy Studies, University of California, San Francisco

^{**}Research Associate, Institute for Health Policy Studies, University of California, San Francisco

Abstract

The aims of this review were to assess smoking prevalence among drug abuse treatment staff and summarize the range of barriers to provision of nicotine dependence intervention to clients receiving addictions treatment. A systematic literature search was conducted to identify publications reporting on workforce smoking prevalence, attitudes toward smoking, and perceived barriers to providing smoking cessation treatment in drug abuse treatment settings. Twenty papers met study inclusion criteria. Staff smoking prevalence estimates in the literature ranged from 14% to 40%. The most frequently reported barriers to providing nicotine dependence intervention in addiction treatment settings were lack of staff knowledge or training in this area, that smoking cessation concurrent with other drug or alcohol treatment may create a risk to sobriety, and staff are themselves smokers. Staff smoking is not uniformly elevated in the drug abuse treatment workforce. Smoking prevalence may be lower where staff are more educated or professionally trained, and may be higher in community-based drug treatment programs. Barriers to treating nicotine dependence may be addressed through staff training, policy development, and by supporting staff to quit smoking. State departments of alcohol and drug programs, and national and professional organizations, can also support treatment of nicotine dependence in drug abuse treatment settings.

Keywords

drug abuse treatment; nicotine dependence; smoking; staff; workforce

The Clinical Guidelines for Treating Tobacco Use and Dependence developed by the U.S. Public Health Service identify persons with co-occurring substance abuse as a population in need of specialized nicotine treatment intervention (Fiore, Bailey & Cohen 2000). This population smokes at a higher rate than does the general population (Sobell, Sobell & Agrawal 2002; Kalman 1998; Burling et al. 1997). Persons with co-occurring nicotine and other substance dependence are more heavily addicted to nicotine than smokers who are not involved in other substance use (Hughes 2002; Sobell 2002; Hays et al. 1999). Those with more severe substance dependence are less successful in attempts to quit smoking compared to smokers without co-occurring substance abuse (Drobes 2002; Joseph, Nichol & Anderson 1993; Zimmerman et al. 1990). Persons with co-occurring nicotine dependence and other substance abuse are more likely to die from smoking related causes than from other substance abuse related causes (Hurt et al. 1996; Hser, McCarthy & Anglin 1994).

While the prevalence of smoking in drug abuse treatment populations is elevated, and although smoking accounts for significant morbidity and mortality in this population, drug abuse treatment programs often do not address smoking. In a national U.S. sample of outpatient methadone clinics, one third of programs had provided smoking-related counseling to any patients in 30 days preceding interview, and only 10% of programs had prescribed nicotine replacement therapy (NRT) (Richter et al. 2004). Among 342 programs participating in the national U.S. drug abuse Clinical Trials Network, 31% reported offering some smoking cessation services. The provision of such services was associated with more positive staff attitudes toward smoking cessation, the number of additional mental health and medical services offered at the clinic, and the presence of a residential detoxification program (Fuller et al. 2007). Among 223 Canadian drug abuse treatment programs, 54% provided support for client smoking cessation but only 10% offered formal smoking cessation intervention (Currie et al. 2003). In a survey of Australian treatment programs, 25% reported having smoking cessation intervention policies, 16% reported that smoking clients received referral to stop smoking groups and 15% reported smoking clients received instruction on NRT use (Walsh et al. 2005b). These studies confirm that most drug abuse treatment programs do not adhere to clinical guidelines (Fiore, Bailey & Cohen 2000) for treating tobacco use and dependence. Counterpoints can be seen in New Jersey, where 2001 changes in licensure standards required residential treatment programs to implement smoke-free grounds policies (Williams et al. 2005), and in the Veterans Administration healthcare system where, supported by monitoring and accountability systems, assessment and counseling for smoking are required three times per year (Ziedonis et al. 2004).

We sought to systematically review studies reporting workforce surveys of drug abuse treatment staff in order to address two specific aims. The first was to assess smoking prevalence among drug abuse treatment staff. Studies have shown that smoking staff were less likely to encourage clients to quit smoking than nonsmoking staff (Bobo & Davis 1993b), and less likely to participate in discussions of treating client nicotine dependence (Campbell, Krumenacker & Stark 1998). A clear accounting of smoking prevalence among drug treatment staff may explain, in part, the slow pace of addressing client smoking in such programs. The second aim was to summarize the range of barriers, as reported by program staff and directors, to provision of nicotine dependence intervention in addiction treatment in these settings.

METHODS

A systematic search was conducted to identify published studies reporting on workforce smoking prevalence and/or perceived barriers to providing smoking cessation treatment in drug abuse treatment settings. Electronic searches conducted through PubMed and PsychINFO were limited to published works, in English, appearing after 1975. The PubMed search used the following Medical Subject Headings (MeSH) terms: Smoking OR Tobacco Use Cessation OR Tobacco Use Disorder OR Tobacco OR Nicotine AND Substance-Related Disorders OR Substance Abuse Treatment Centers AND Attitude. The PsychINFO search included the following PsychINFO Thesaurus terms: Tobacco Smoking OR Nicotine OR Smoking Cessation AND Drug Usage AND Health Personnel Attitudes. The terms Drug Usage and Health Personnel Attitudes were exploded so that the search included all “narrower terms” that fell below the two terms in the Thesaurus hierarchy. We also searched an in-house Endnote library on nicotine and substance abuse, previously created by the research team while developing research projects in this area. Documents listed in the endnote file were labeled by the research team with several keywords for future access, and we used the search term “survey” to locate relevant papers included in the library.

These electronic search procedures identified 894 publications having the selected search terms. All abstracts were read by one reviewer (EP) and compared against specified inclusion criteria using a checklist. These criteria were: (1) the publication concerned alcohol and/or drug treatment centers/programs/units, or people with alcohol or drug dependence, or people in recovery from alcohol/drug dependence; (2) staff members were surveyed (using either written survey or interview procedures); and (3) tobacco use or dependence was discussed. For five papers (less than 1%) the abstract was not available electronically, at the University library, or through interlibrary loan. For these listings, only the titles were reviewed further.

Manual review of the abstracts found 50 unduplicated publications meeting initial inclusion criterion. These 50 abstracts were reviewed a second time to ensure that they (a) were surveys of drug abuse treatment staff and (b) that the survey included tobacco as a topic. Independent review of these abstracts by two reviewers (EP, STM) achieved a high level of agreement ($\kappa = .92$). Two abstracts where there was disagreement were resolved in discussion and review with a third reviewer (JG). These procedures identified 18 articles meeting study criteria. Reference sections for these articles were manually searched for additional articles meeting inclusion criteria, resulting in three articles not previously found. Finally, two articles were identified by the study team outside of these search procedures, and in the course of conducting related research projects.

Among articles identified through electronic review procedures but not included in the current review were survey studies with other health professionals employed outside of drug treatment settings (e.g. Moodley-Kunnie 1988), articles focused on public service workforce populations such as police officers and home health nurses (e.g. Borrelli et al. 2001; Richmond et al. 1999), and articles focused on drug treatment that were descriptive in nature but that did not report workforce survey results (e.g. Pletcher 1993).

In all, search procedures identified 23 articles reporting on surveys of substance abuse treatment staff or directors, and focused on issues related to nicotine dependence treatment in those settings. Three of these did not report either smoking prevalence among staff or barriers to provision of nicotine dependence intervention to clients, and were not considered further (Williams et al. 2005; Currie et al. 2003; Goldsmith, Hurt & Slade 1991). Among the remaining 20 articles, 15 reported on smoking prevalence of staff, 15 reported on barriers to the treatment of nicotine dependence in addiction treatment settings, and eight reported on both staff smoking prevalence and barriers. Where multiple articles reported from the same data, we included only the primary article in the summary tables (11 papers in Table 1 and 11 papers in Table 2).

RESULTS

Results are reported in two sections, the first concerning prevalence of staff smoking as summarized in Table 1, and the second concerning perceived barriers to smoking cessation intervention as summarized in Table 2.

Prevalence of Staff Smoking and Relationship with Client Nicotine Dependence Intervention

Among the 15 articles reporting on smoking prevalence among program staff, 11 were primary articles and four concerned reanalysis of primary data. Among the 11 primary articles, eight involved surveys of treatment staff, two involved surveys of program directors, and one reported surveys of both staff and directors. Several articles also reported survey data from clients (e.g. McDonald, Roberts & Descheemaeker 2000; Patten et al. 1999) however, as the focus here concerns staff, this review describes client survey data

only when they were related to counselor responses (Olsen et al. 2005; Bernstein & Stoduto 1999).

Surveys of drug abuse treatment staff—In the earliest staff survey identified, Bobo and Gilchrist (1983) assessed attitudes of alcohol treatment staff toward smoking cessation for clients, and whether those attitudes may be related to staff's own experience with alcohol or tobacco dependence. Directors of all inpatient alcohol treatment programs in Washington State ($n = 24$) agreed to participate and distributed surveys to clinical staff. Responses were received from 23 clinics and 311 staff. Based on the number of surveys distributed, response rate was estimated at 75%. In this sample, 40% were smokers. Most (53%) supported intervening on client smoking after one year of sobriety, although only 33% reported actually doing so. Staff who were smokers, whether or not they also had a history of alcohol problems, were less likely to encourage smoking cessation for clients.

Bobo and Davis (1993a) contacted program directors in all 69 Nebraska chemical dependency programs and asked them to distribute, collect, and return anonymous surveys for clinical staff. This procedure was supplemented by a one-time mailing to certified chemical dependency counselors, giving a total of 767 participants. Based on the number of study-eligible staff in the state, the response rate was estimated at 95%. Respondents who had smoked at least 10 cigarettes per day for one month were labeled as "ever smokers" (63%). Ever smokers who were abstinent from tobacco for six months at the time of the survey were designated as "former smokers" (31%) and the rest were current smokers (32%). Respondents self-identified as recovering alcoholics (45%), having a history of problem drinking (7%) or no history of alcohol problems (48%). Most respondents (97%) would support their client's decision to stop smoking. Staff in recovery from substance abuse reported as many quit attempts as those in the other groups, but had shorter smoke-free periods during and greater relapse following a quit attempt.

Two articles, not shown in Table 1, were based on the same data. Bobo, Slade & Hoffman (1995) explored staff attitudes using four questions: whether persons in alcohol treatment should be urged to quit smoking (35% agreed), whether clients should be urged to quit smoking after being alcohol-free for one year (77% agreed), whether they had ever advised a client to quit smoking (49% yes), and whether they routinely advised clients to quit (30% yes). Current smokers were less likely to provide counseling about smoking, while status as a recovering alcoholic or problem drinker was not related to nicotine counseling practices. More knowledge about nicotine addiction and working in programs that provided nicotine services were positively associated with providing smoking cessation intervention to clients. Bobo and Davis (1993b) reported on a subset of data from staff in 34 rural Nebraska programs ($n = 257$, 89% response), and focused on respondents ($n = 124$) who self identified as being in recovery. The authors noted that the 47% smoking prevalence was high when compared to state and national rates at the time, but low when compared with other samples of persons in recovery.

While studying the effectiveness of nicotine dependence treatment in an inpatient substance abuse program, Hurt and colleagues (1995) assessed staff attitudes before and after the intervention. The staff survey asked whether respondents thought smoking cessation would affect substance abuse treatment outcomes, and whether patients should be encouraged to quit during or after treatment. Staff completed the survey before ($n = 51$) and after the trial ($n = 55$), with response rates of 96% and 92% respectively. In this medical clinic setting, 21% of respondents were physicians and 47% were registered nurses. Current smoking was reported by 14% at baseline and 11% at follow-up. Respondents to the post-study survey, as compared to those in the prestudy survey, more often thought that smoking cessation should be provided to all smokers, that providing smoking cessation may improve substance abuse

outcomes, and that patients should be encouraged to quit smoking when they entered treatment.

Building on practice guidelines which recommend that all healthcare professionals address smoking in their clients, Hahn, Warnick and Plemmons (1999) sought to describe counselors' attitudes toward nicotine dependence treatment, and to identify barriers to implementing such treatment. All certified substance abuse counselors in Kentucky (n = 479) were invited by mail to participate in the survey, and 53% responded. Many respondents (58%) held a master or doctoral degree, and 23% were current smokers. While 84% thought nicotine dependence should be treated in their practice setting, few provided such treatment. Routine tobacco assessment was reported by 44%, about half offered advice (56%) or referral (54%) related to quitting smoking, and 13% offered smoking cessation treatment to clients. Compared to smoking counselors, nonsmoking counselors were more positive about treating nicotine dependence and saw fewer barriers to doing so. The authors suggested that education about clinical guidelines for smoking treatment should be disseminated to all certified substance abuse counselors, and that states consider mandatory continuing education on smoking cessation.

Bernstein and Stoduto (1999) reported on a smoking cessation intervention in a Toronto treatment program. For all staff and clients, the intervention first provided smoking-awareness education and then offered optional smoking cessation intervention. "All available" staff (n = 55) and "all available" clients who received the smoking-awareness education (n = 54) were surveyed after the program had operated for three months. Response rates were not reported. Among staff, 33% were smokers. Attitudes toward the smoking cessation program were supportive and generally similar between staff and clients. More than half (55.6%) of staff smokers enrolled in the cessation program within one year, and 38% of client smokers enrolled in cessation following the smoking-awareness education. The authors concluded that clients are willing to engage in smoking cessation when offered education, support, and a choice to participate.

Patten and colleagues (1999) studied staff attitudes in the context of implementing a smoke-free policy in a Naval inpatient treatment setting. Staff were surveyed anonymously two months before the policy change (n = 86, 61% response rate), and at six months post implementation (n = 104, 77% response rate). Staff smoking rates were 14% in the pre- and 9% in the post-implementation sample. Although 80% supported the policy change at both time points, current smokers and staff who were in recovery were less supportive. Staff in recovery were also less supportive of treating smoking in their setting and concurrent with other addictions.

McDonald, Roberts and Descheemaeker (2000) studied the implementation of a tobacco education and cessation program in a residential adolescent treatment program. Staff completed an anonymous questionnaire before (n = 50, 50% completion rate) and after (n = 44, 40% completion rate) program implementation. Among staff, 22% at pretest and 18% at posttest were smokers. Compared to pretest, staff at posttest were more supportive of a staff smoking policy. At posttest, heavier smokers were less likely to support policy change related to staff smoking, and less likely to support a smoke-free grounds policy. Most staff at posttest (93%) thought that clients may be affected by staff attitudes toward smoking.

Olsen, Alford, Horton and Saitz (2005) surveyed clients and staff in three methadone programs. Client eligibility was restricted to current smokers, and clients identified their primary counselor so that client and counselor responses could be linked. Clients were interviewed concerning beliefs about smoking cessation and relapse to heroin use, and how frequently their counselor had discussed smoking with them in the past six months.

Counselors were surveyed concerning their own smoking history and the issue of smoking cessation and relapse, and about how frequently they had discussed smoking with their clients. All eligible clients who were approached (n = 438) and all eligible counselors (n = 42) participated. Among staff, 31% were smokers and 24% had received training in smoking cessation counseling. While 48% of clients reported having received smoking-related counseling from their counselor, 97% of counselors reported providing such counseling to clients. While clients were responding in terms of their individual counselor, counselors were responding in terms of all of their smoking clients. Longer counseling relationship was positively associated with, and higher counselor caseload was negatively associated with, patient receipt of smoking cessation counseling.

Surveys of drug abuse treatment directors—Knapp, Rosheim, Meister and Kottke (1993) surveyed program directors of licensed treatment facilities in Minnesota, both before (1988) and after (1990) a statewide intervention to increase tobacco policy development in drug abuse treatment settings. Baseline data were collected through phone surveys, and 96% (n = 218) of directors responded. Follow up data were collected by mail, and 57% (n = 147) responded. Survey items concerned description of treatment facilities, beliefs about tobacco dependence and its treatment in those facilities, and description of tobacco-related policies. At baseline, 20% were current smokers. Most (71%) thought nicotine dependence should be treated like other drug dependencies, one-third thought nicotine dependence treatment should be offered in the context of other drug abuse treatment, and 13% reported offering such treatment in their program. Directors estimated that 24% of their staff were smokers. Follow up smoking rates are not comparable to baseline because the samples were different, and follow up reporting was restricted to those present at both time points (n = 104). Over time, the proportion of programs treating nicotine dependence increased from 10% to 18%, and the proportion reporting smoke-free policies increased from 11% to 27%. The authors observed the discrepancy between the frequent belief that nicotine dependence should be treated along with other drug dependencies and the low rate at which this occurred in practice.

Richter and colleagues (2004) identified all U.S. outpatient opioid maintenance clinics and invited the director of each clinic to complete a brief survey. The survey included information about the respondent, the clinic, and practices related to nicotine dependence treatment. Of 697 clinics contacted, 408 (59%) responded. Smoking among clinic leaders was 19%, and respondents estimated that 22% of staff in their clinics were smokers. Most clinics screened for (82%) and recorded (71%) client smoking status at admission, and provided clients with advice to stop smoking (73%). One-third provided smoking-related counseling, brochures or referrals to clients in the past 30 days, and fewer provided nicotine replacement therapy (12%) or comprehensive nicotine dependence services (10%). Written guidelines requiring treatment of nicotine dependence and having staff trained to provide such treatment were positively associated with comprehensive nicotine dependence services, while private for-profit program status was negatively associated with such services. In a second report, McCool, Richter and Choi (2005) observed the discrepancy between the proportion who thought methadone clinics should provide smoking cessation intervention (76%) or referral (91%) to clients, and the proportions actually doing so (41% and 31% respectively). A third report focused on policy questions contained in the survey (Richter, Choi & Alford 2005). Most programs (90%) had indoor smoking bans and had written smoking policies for staff (82%) and clients (73%), and about half had some restrictions on outdoor smoking. This series of articles advocated integration of nicotine dependence treatment into drug treatment settings, and offered several strategies for doing so.

Surveys of both directors and staff—Walsh and colleagues (2005b) surveyed all drug and alcohol treatment clinics in Australia (n = 435 programs). At each program, one unit

manager and one staff member were asked to complete a survey concerning agency regulations on smoking, provision of smoking cessation services, and attitudes toward smoking cessation in their setting. Response rates were 60% for agencies (at least one survey was returned), 53% for managers, and 50% for the selected staff. Current smoking was reported by 27% of managers and 36% of staff. Asked to estimate smoking prevalence among staff, managers estimated 24% while staff respondents estimated 30%. Authors noted that the 27% smoking prevalence among managers was similar to national prevalence at that time (25%), while the 36% prevalence among staff exceeded the national rate. Most reported that offering smoking cessation to clients was at the discretion of individual staff (83% of managers, 79% of staff), and about a quarter said the agency had a written policy about providing smoking cessation to clients. The most frequently reported smoking related intervention was recording client smoking status (68% of managers and 63% of staff), and both groups estimated that about a third of clients received adequate advice related to smoking.

Barriers to Providing Smoking Cessation Treatment

Among the 15 articles reporting on barriers to providing smoking cessation services in addiction treatment settings, 12 were primary articles and three provided secondary analyses (Richter 2006; Walsh et al. 2005a; Bobo & Davis 1993b). Two of the primary articles found do not appear in Table 2. An article by Richter and colleagues (2004) is not included because a later article based on the same data provided a more comprehensive discussion of barriers (McCool, Richter & Choi 2005). Hurt and colleagues' article (1995) is not included because the barrier reported in the article (perceived risk to sobriety) did not reach the 10% endorsement threshold in the two cross-sectional samples reported, although it did reach threshold in a subsample analysis. One secondary article is included in Table 2 because it offers barrier information not previously reported (Richter 2006). Among these 11 articles listed, six involved surveys of staff, four involved surveys of program directors or administrators, and one reported surveys of both staff and directors.

To develop the summary table (Table 2), several inclusion and exclusion criteria were applied. First, Table 2 is focused on barriers to providing nicotine dependence intervention, and excludes articles reporting on barriers to a specific program policy such as a smoke-free grounds policy (e.g. McDonald, Roberts & Descheemaeker 2000; Patten et al. 1999; Goldsmith, Hurt & Slade 1991). Second, barriers included in the table generally reflect participant responses to survey items, or analysis of those responses, and were not included if they were offered only as general commentary by the authors. Finally, barriers were included in the table only if (a) the barrier appeared in more than one article and (b) within a given article the barrier was endorsed by at least 10% of respondents. These parameters enable a focus on more frequently reported or more frequently endorsed barriers.

The articles are listed in Table 2, in the left hand column, according to whether they represent staff surveys, director surveys, or both staff and directors. Barriers appear, across the top of the table, grouped into categories of resource limitations, staff beliefs or attitudes, or other factors. Where barriers were reported based on response to a survey item, the percent endorsing the barrier is included in the table. Where the barrier was reported as a relationship between variables, this is indicated by a check mark in the table. For example, Bobo and colleagues (1995) reported a relationship between greater knowledge of nicotine addiction and increased likelihood that counselors would address smoking with their clients. Where the barrier could not be represented by either a percentage or a relationship, it is represented with a footnote and explained below the table.

Resource limitations on treating smoking in addiction treatment settings—The most frequently reported barrier to provision of smoking cessation services was that line staff had insufficient knowledge or training to assess and treat smoking (Table 2). For example, 20% of program directors in a study by Willenbring and colleagues (2004) and 29% of directors in one by McCool and colleagues (2005) reported lack of staff skills or knowledge as a barrier. Gill and Bennett (2000) found that counselors with 20 or more hours of annual nicotine dependence training had more positive attitudes toward smoking intervention and were more likely to address smoking with their clients, compared to staff who had less than five hours of such training. Three articles reported lack of staff time as a barrier. For example, Walsh and colleagues (2005b) found that over 50% of program managers and staff thought that lack of time was a very important or quite important barrier, and Olsen colleagues (2005) found that counselors with a higher caseload were less likely to address smoking among their clients. With regard to on-site smoking cessation services, both Bobo and colleagues (1995) and Fuller and colleagues (2007) found that presence of such services was associated with more positive attitudes toward treating smoking in addiction treatment programs. Richter and colleagues (2004), not included in Table 2, found that methadone programs offering nicotine dependence treatment were more likely to have written policies regulating smoking and more likely to restrict outdoor smoking. Respondents in two articles identified inadequate staffing as a barrier, here referring to the absence of staff having specialized smoking cessation capabilities or roles, or to lack of administrative staff needed to support such a service (Willenbring et al. 2004; McCool, Richter & Choi 2005). Last, two articles reported lack of reimbursement as a barrier to providing client-level nicotine dependence treatment (see Table 2).

Staff beliefs about treating smoking in addiction treatment settings—The belief that quitting smoking may represent a risk to sobriety was reported, above the 10% threshold, in five studies. In an article by Knapp and colleagues (1993) nearly 20% of staff agreed that “quitting smoking would interfere with recovery from other drug use.” Richter (2006) reported that most program directors who also had clinical responsibilities had at some time urged a patient to delay quitting smoking, with the reason that persons in addictions treatment should not change too many things at one time. Three articles reported the belief that smoking cessation should not be initiated during treatment because treating other addictions was more important, and two articles reported the belief that clients are not interested in quitting smoking. In two articles, small proportions of respondents endorsed the idea that smoking is helpful to clients engaged in addictions treatment. Richter (2006) reported that 14% of methadone program directors surveyed thought that clients benefited from smoking, while Walsh and colleagues (2005b) found that some managers (13%) and staff (17%) thought that smoking together with clients helped to build rapport.

Other barriers to treating smoking in addiction treatment settings—Two studies reported that there was little demand for smoking cessation services among clients in treatment settings. Willenbring and colleagues (2004) found that, among 220 directors or other leaders of Veteran’s Administration (VA) substance use disorder clinics, 15% of respondents reported “low demand or low priority” for smoking cessation as a barrier to implementing VA guidelines in this area. Counselors in Kentucky reported that they received a mean of one request per month ($SD = 2.7$) for smoking cessation treatment, and identified few requests as a barrier to implementation (Hahn, Warnick & Plemmons 1999).

Staff smoking was observed as a barrier to provision of nicotine dependence intervention in five studies. Compared to nonsmokers, staff who smoked were less likely to support or encourage smoking cessation for their clients who smoked (Bobo & Gilchrist 1983) and less likely to provide counseling for nicotine dependence (Bobo, Slade & Hoffman 1995). In other studies, smoking counselors were more likely to see barriers to the provision of

smoking cessation to their clients (Hahn, Warnick & Plemmons 1999), and less likely to support smoking cessation intervention concurrent with other addictions treatment (Gill & Bennett 2000). Walsh and colleagues (2005b) found that “staff being smokers themselves” was seen as a barrier by 25% of both managers and staff.

Several barriers came up in a single study, and so do not appear in Table 2. These include “pharmacy or formulary restrictions” (Willenbring et al. 2004), “lack of coordinated staff approach in providing smoking interventions” (Walsh et al. 2005b), and the beliefs that quitting smoking is more difficult for alcoholics and should not be incorporated into alcohol dependence treatment (Bobo & Gilchrist 1983). Respondents in studies by Walsh and colleagues (2005a,b) reported “lack of staff confidence in their ability to counsel smokers” and “clients spend too little time at this agency to counsel about smoking” to be a very or quite important barriers, and half of the sample thought that an increased in focus on smoking would decrease client attendance.

DISCUSSION

The aims of this review were to assess smoking prevalence among drug abuse treatment staff and to summarize the range of barriers, as reported by program staff and directors, to provision of nicotine dependence intervention to clients receiving addictions treatment. Smoking prevalence among substance abuse counselors, based on estimates reported in 11 papers, ranged from 14% to 40%. Discounting studies with the lowest response rates (McDonald, Roberts & Descheemaeker 2000; Hahn, Warnick & Plemmons 1999) does not change this range. The range of staff smoking rates reported across studies suggests that smoking prevalence is not elevated uniformly in the drug abuse treatment workforce, but may be elevated in some settings or types of settings. Specifically, articles reporting the lowest staff smoking rates (14%) appear to have included staff with higher educational and professional training. In Hurt and colleagues’ study (1995) 68% of participants were physicians or registered nurses, while Patten and colleagues (1999) described the staff as including “civilians, Naval officers, physicians, counselors, psychologists, social workers, student interns, and support staff.” The remaining articles reported staff smoking rates in the range from 22% to 40%, and we suggest that this range offers a simple guide to evaluate staff smoking prevalence within any given program. Any program with staff smoking prevalence near 40% is at the highest prevalence observed in the literature in over 20 years. Another strategy for evaluating smoking prevalence rates in any given program is to compare the program prevalence rate to state and national rates (Bobo & Davis 1993b; Walsh et al. 2005b).

The prevalence of smoking among treatment staff is of interest as staff smoking is a frequently reported barrier to the implementation of program policies and client level intervention for smoking cessation (Walsh et al. 2005b; Gill & Bennett 2000; Hahn, Warnick & Plemmons 1999; Campbell, Krumenacker & Stark 1998; Bobo, Slade & Hoffman 1995; Bobo & Gilchrist 1983). At the same time, staff smoking was not endorsed as a barrier in four studies where it was included in surveys (Olsen et al. 2005; McCool, Richter & Choi 2005; Bernstein & Stoduto 1999; Hurt et al. 1995). Further, Olsen and colleagues (2005) found that counselor smoking status was not associated with client reports of receiving smoking intervention, and McCool and colleagues (2005) found that staff attitudes toward smoking cessation in addiction treatment settings did not differ by smoking status.

Regarding the range of barriers to provision of nicotine dependence intervention in addictions treatment settings, three barriers were prominent in this review. These were lack of staff knowledge or training related to nicotine dependence treatment, that smoking

cessation concurrent with other drug or alcohol treatment may create a risk to sobriety, and that many staff are themselves smokers. Lack of knowledge and training was reported as a barrier to smoking cessation treatment in a variety settings, including VA programs (Willenbring et al. 2004), methadone clinics (McCool, Richter & Choi 2005), and by both clinic leaders (McCool, Richter & Choi 2005; Knapp et al. 1993) and staff (Gill & Bennett 2000; Hahn, Warnick & Plemmons 1999; Bobo, Slade & Hoffman 1995) in the U.S., and Australia (Walsh et al. 2005b). This most widely reported barrier is of interest because studies have found that an increase in staff knowledge or training resulted in a higher provision of (Bobo, Slade & Hoffman 1995) or a difference in staffs' attitudes towards (Gill & Bennett 2000) smoking cessation treatment. The belief that smoking cessation concurrent with other addictions treatment may represent a risk to sobriety is common in the treatment field, and echoes the traditional guideline that persons beginning sobriety should avoid other major life changes for at least one year. Knapp and colleagues (1993), for example, found that 77% of counselors recommended after one year of sobriety as the most appropriate time to address client smoking. The perception of smoking cessation as a risk to sobriety, while appearing frequently in this review, was sometimes endorsed by small proportions of staff: 13% in a study by Hurt and colleagues (1995) and 20% in one by Knapp and colleagues (1993). In contrast to the perception of risk to sobriety, Prochaska, Delucchi and Hall (2004) found that smoking cessation efforts concurrent with addictions treatment was associated with a 25% increase in long-term abstinence from other drugs. The third frequently occurring barrier in this review was that program staff are themselves smokers; we suggest that this barrier is related to elevated prevalence of smoking among staff in some community-based treatment programs.

A key limitation of this work is that the studies reported span a period of more than 20 years, so that both prevalence estimates and barriers may have changed over time. Some of the more recent staff smoking prevalence estimates, however, suggest a range of staff smoking from 22% to 36% (Olsen et al. 2005; Walsh et al. 2005b; Richter et al. 2004). Focusing only on U.S. studies, and in comparison to the 20.9% smoking prevalence among U.S. adults (CDC 2006), recent estimates are 22% and 31%. These data suggest that smoking rates among community-based drug treatment staff are elevated above that of the general population. Further, prevalence estimates in this review reflect a number of samples, and may be of limited generalizability. The largest samples included 767 counselors surveyed in Nebraska (Bobo & Davis 1993a) and 408 methadone treatment program directors (Richter et al. 2004). In the U.S. specifically, and with the exception of the study by Richter and colleagues (2004), there are no recent, large, regional or national counselor surveys reporting smoking prevalence. These same limitations, related to reliance on multiple small samples and generalizability, relate to the discussions of barriers to providing smoking cessation services. One additional limitation is that reviewing the literature on barriers requires some interpretation. While we applied and described the basis of including barriers in this review, other reviewers applying more or less conservative criteria may identify different barriers or assign to them different levels of importance.

Notwithstanding these limitations, some implications for the field may be drawn. Smoking prevalence is elevated above that of the general population in many studies where it was reported, and staff smoking is a commonly reported barrier to addressing nicotine dependence in addictions treatment settings. However, staff smoking rates are not uniformly elevated. We suggest that treatment settings with higher proportions of medical and professional staff are likely to have lower rates of staff smoking, while community-based treatment programs and especially those that recruit staff from recovering populations are likely to have higher rates of staff smoking. Adolescent treatment programs, consistent with data reported by McDonald and colleagues (2000) and Chun and colleagues (2007) may also tend to have lower staff smoking rates compared to other community-based treatment

programs. Consequently, individual treatment programs and systems are encouraged to measure staff smoking rates, and to consider them in the context of state and national smoking rates as well as rates reported in the literature when developing nicotine dependence policies or services. Reduction of smoking prevalence in the drug abuse treatment workforce, in addition to enhancing the health of the workforce, will support development and implementation of nicotine dependence services for clients. “No evidence” policies, requiring that staff do not use tobacco during work hours or when representing the treatment facility (Williams et al. 2005), are complementary to reducing staff smoking as they remove smoking cues from the client-counselor relationship and may encourage counselors to assess their own nicotine dependence. Second, as a prominent barrier to better addressing nicotine dependence in addiction treatment programs, lack of staff training and knowledge has a practical remedy in the form of staff training. This may include general education for all counselors about nicotine as an addictive drug, and more specialized training to build a cadre of counselors who can provide cessation services to clients. Such training, at the treatment program and system level, has other benefits as well. It can address counselor beliefs that quitting smoking impedes sobriety, that treating other addictions is more important than treating nicotine addiction, or that smoking is helpful to clients in their recovery from other drug use. Last, we (along with others) suggest: (a) dissemination of clinical guidelines for smoking treatment to all certified substance abuse counselors; (b) that states consider mandatory counselor continuing education on smoking cessation (Hahn, Warnick & Plemmons 1999); (c) that funding be targeted to support reimbursement for smoking cessation intervention for clients; and (d) that resources be developed to enable treatment of smoking among staff (McCool, Richter & Choi 2005). These steps require not only the efforts of treatment programs and local treatment systems, but collaboration between state departments of alcohol and drug treatment and national and professional organizations in the development of policy guidelines for treatment of nicotine dependence in drug abuse treatment settings (Walsh et al. 2005b; Hahn, Warnick & Plemmons 1999).

Acknowledgments

This work was supported by the National Institute on Drug Abuse (R01 DA020705), the California-Arizona research node for the NIDA Clinical Trials Network (U10 DA015815), and the NIDA San Francisco Treatment Research Center (P50 DA009253).

REFERENCES

- Bernstein SM, Stoduto G. Adding a choice-based program for tobacco smoking to an abstinence-based addiction treatment program. *Journal of Substance Abuse Treatment* 1999;17(1–2):167–173. [PubMed: 10435266]
- Bobo JK, Davis CM. Cigarette smoking cessation and alcohol treatment. *Addiction* 1993a;88(3):405–412. [PubMed: 8384911]
- Bobo JK, Davis CM. Recovering staff and smoking in chemical dependency programs in rural Nebraska. *Journal of Substance Abuse Treatment* 1993b;10(2):221–227. [PubMed: 8389899]
- Bobo JK, Gilchrist LD. Urging the alcoholic client to quit smoking cigarettes. *Addictive Behaviors* 1983;8(3):297–305. [PubMed: 6666694]
- Bobo JK, Slade J, Hoffman AL. Nicotine addiction counseling for chemically dependent patients. *Psychiatric Services* 1995;46(9):945–947. [PubMed: 7583510]
- Borrelli B, Hecht JP, Papandonatos GD, Emmons KM, Tatewosian LR, Abrams DB. Smoking-cessation counseling in the home attitudes, beliefs, and behaviors of home healthcare nurses. *American Journal Of Preventative Medicine* 2001;21(4):272–277.
- Burling TA, Ramsey TG, Seidner AL, Kondo CS. Issues related to smoking cessation among substance abusers. *Journal of Substance Abuse* 1997;9:27–40. [PubMed: 9494937]

- Campbell BK, Krumenacker J, Stark MJ. Smoking cessation for clients in chemical dependence treatment. A demonstration project. *Journal of Substance Abuse Treatment* 1998;15(4):313–318. [PubMed: 9650139]
- Centers For Disease Control And Prevention (CDC). Tobacco use among adults—United States, 2005. *Morbidity And Mortality Weekly Report* 2006;55(42):1145–1148. [PubMed: 17065979]
- Chun J, Guydish J, Chan Y-F. Smoking among adolescents in substance abuse treatment: A study of prevalence, programs, and policy. *Journal Of Psychoactive Drugs*. 2007
- Currie SR, Nesbitt K, Wood C, Lawson A. Survey of smoking cessation services in Canadian addiction programs. *Journal of Substance Abuse Treatment* 2003;24(1):59–65. [PubMed: 12646331]
- Drobes DJ. Cue reactivity in alcohol and tobacco dependence. *Alcohol: Clinical and Experimental Research* 2002;26(12):1928–1929.
- Fiore, MC.; Bailey, WC.; Cohen, SJ. Treating Tobacco Use And Dependence: Clinical Practice Guidelines. Rockville, MD: U.S. Department Of Health And Human Services; 2000.
- Fuller BE, Guydish J, Tsoh J, Reid MS, Resnick M, Zammarelli L, Ziedonis DM, Sears C, McCarty D. Attitudes toward the integration of smoking cessation treatment into drug abuse clinics. *Journal of Substance Abuse Treatment* 2007;32(1):53–60. [PubMed: 17175398]
- Gill BS, Bennett DL. Addiction professionals' attitudes regarding treatment of nicotine dependence. *Journal of Substance Abuse Treatment* 2000;19(4):317–318. [PubMed: 11281125]
- Goldsmith RJ, Hurt RD, Slade J. Development of smoke-free chemical dependency units. *Journal of Addictive Diseases* 1991;11(2):67–77. [PubMed: 1667365]
- Hahn EJ, Warnick TA, Plemmons S. Smoking cessation in drug treatment programs. *Journal of Addictive Diseases* 1999;18(4):89–101. [PubMed: 10631966]
- Hays JT, Schroeder DR, Offord KP, Croghan IT, Patten CA, Hurt RD, Jorenby DE, Fiore MC. Response to nicotine dependence treatment in smokers with current and past alcohol problems. *Annals of Behavioral Medicine* 1999;21(3):244–250. [PubMed: 10626032]
- Hser YI, McCarthy WJ, Anglin MD. Tobacco use as a distal predictor of mortality among long-term narcotics addicts. *Preventative Medicine* 1994;23(1):61–69.
- Hughes J. Do smokers with current or past alcoholism need different or more intensive treatment? *Alcohol Clinical And Experimental Research* 2002;26(12):1934–1935.
- Hurt RD, Offord KP, Croghan IT, Gomez-Dahl L, Kottke TE, Morse RM, Melton LJ 3rd. Mortality following inpatient addictions treatment. Role of tobacco use in a community-based cohort. *Journal of the American Medical Association* 1996;275(14):1097–1103. [PubMed: 8601929]
- Hurt RD, Croghan IT, Offord KP, Eberman KM, Morse RM. Attitudes toward nicotine dependence among chemical dependence unit staff—before and after a smoking cessation trial. *Journal of Substance Abuse Treatment* 1995;12(4):247–252. [PubMed: 8830151]
- Joseph AM, Nichol KL, Anderson H. Effect of treatment for nicotine dependence on alcohol and drug treatment outcomes. *Addictive Behaviors* 1993;18(6):635–644. [PubMed: 8178702]
- Kalman D. Smoking cessation treatment for substance misusers in early recovery: A review of the literature and recommendations for practice. *Substance Use And Misuse* 1998;33(10):2021–2047. [PubMed: 9744841]
- Knapp JM, Rosheim CL, Meister EA, Kottke TE. Managing tobacco dependence in chemical dependency treatment facilities: A survey of current attitudes and policies. *Journal of Addictive Diseases* 1993;12(4):89–104. [PubMed: 8292642]
- McCool RM, Richter KP, Choi WS. Benefits of and barriers to providing smoking treatment in methadone clinics: Findings from a national study. *American Journal on Addictions* 2005;14(4):358–366. [PubMed: 16188716]
- McDonald CA, Roberts S, Descheemaeker N. Intentions to quit smoking in substance-abusing teens exposed to a tobacco program. *Journal of Substance Abuse Treatment* 2000;18:219–308.
- Moodley-Kunnie T. Attitudes and perceptions of health professionals toward substance use disorders and substance-dependent individuals. *International Journal of the Addictions* 1988;23(5):469–475. [PubMed: 3209287]
- Olsen Y, Alford DP, Horton NJ, Saitz R. Addressing smoking cessation in methadone programs. *Journal of Addictive Diseases* 2005;24(2):33–48. [PubMed: 15784522]

- Patten CA, Martin JE, Hofstetter CR, Brown SA, Kim N, Williams C. Smoking cessation following treatment in a smoke-free Navy alcohol rehabilitation program. *Journal of Substance Abuse Treatment* 1999;16(1):61–69. [PubMed: 9888123]
- Pletcher VC. Nicotine treatment at the drug dependency program of the Minneapolis VA Medical Center. A program director's perspective. *Journal of Substance Abuse Treatment* 1993;10(2):139–145. [PubMed: 8389894]
- Prochaska JJ, Delucchi K, Hall SM. A meta-analysis of smoking cessation interventions with individuals in substance abuse treatment or recovery. *Journal of Consulting and Clinical Psychology* 2004;72(6):1144–1156. [PubMed: 15612860]
- Richmond RL, Kehoe L, Hailstone S, Wodak A, Uebel-Yan M. Quantitative And qualitative evaluations of brief interventions to change excessive drinking, smoking and stress in the police force. *Addiction* 1999;94(10):1509–1521. [PubMed: 10790903]
- Richter KP. Good and bad times for treating cigarette smoking in drug treatment. *Journal of Psychoactive Drugs* 2006;38(3):311–315. [PubMed: 17165374]
- Richter KP, Choi WS, Alford DP. Smoking policies in U.S. outpatient drug treatment facilities. *Nicotine and Tobacco Research* 2005;7(3):475–480. [PubMed: 16085516]
- Richter KP, Choi WS, McCool RM, Harris KJ, Ahluwalia JS. Smoking cessation services in U.S. methadone maintenance facilities. *Psychiatric Services* 2004;55(11):1258–1264. [PubMed: 15534014]
- Sobell MB. Alcohol and tobacco: Clinical and treatment issues. *Alcohol: Clinical and Experimental Research* 2002;26(12):1954–1955.
- Sobell LC, Sobell MB, Agrawal S. Self-change and dual recoveries among individuals with alcohol and tobacco problems: Current knowledge and future directions. *Alcohol: Clinical and Experimental Research* 2002;26(1):1936–1938.
- Walsh RA, Bowman JA, Tzelepis F, Lecathelinais C. Regulation of environmental tobacco smoke by Australian drug treatment agencies. *Australian and New Zealand Journal of Public Health* 2005a;29(3):276–278. [PubMed: 15991778]
- Walsh RA, Bowman JA, Tzelepis F, Lecathelinais C. Smoking cessation interventions in Australian drug treatment agencies: A national survey of attitudes and practices. *Drug and Alcohol Review* 2005b;24(3):235–244. [PubMed: 16096127]
- Willenbring ML, Kivlahan D, Kenny M, Grillo M, Hagedorn H, Postier A. Beliefs about evidence-based practices in addiction treatment: A survey of Veterans Administration Program leaders. *Journal of Substance Abuse Treatment* 2004;26(2):79–85. [PubMed: 15050084]
- Williams JM, Foulds J, Dwyer M, Order-Connors B, Springer M, Gadde P, Ziedonis DM. The integration of tobacco dependence treatment and tobacco-free standards into residential addictions treatment in New Jersey. *Journal of Substance Abuse Treatment* 2005;28(4):331–340. [PubMed: 15925267]
- Ziedonis, D.; Williams, JM.; Steinberg, ML.; Smelson, D.; Krejci, J.; Sussner, BD.; Violette, N.; Foulds, J. Addressing tobacco dependence among veterans with a psychiatric disorder: A neglected epidemic and public health concern. In: Isaacs, SL.; Schroeder, SA.; Simon, JA., editors. *VA in the Vanguard: Building on Success in Smoking Cessation*. San Francisco, CA: Department Of Veterans Affairs; 2004.
- Zimmerman RS, Warheit GJ, Ulbrich PM, Auth JB. The relationship between alcohol use and attempts and success at smoking cessation. *Addictive Behaviors* 1990;15(3):197–207. [PubMed: 2378280]

Substance Abuse Treatment Workforce Survey Studies Reporting Staff Smoking Prevalence

TABLE 1

Source	Program (N)	Response Rate (%) [*]	Participants (N)		Smoking (%) [*]	
			Director	Staff	Director	Staff
Staff Survey						
Bobo & Gilchrist 1983	24	75 ^{***}		311		40
Bobo & Davis 1993a	69	95 ^{***}		767 ^{*****}		32
Hurt et al. 1995 ^{**}	1	96		51		14
Bernstein & Stoduto 1999	1			55		33
Hahn, Warnick & Plemmons 1999		53		254		23
Patten et al. 1999 ^{**}	1	61		86		14
McDonald, Roberts & Descheemaeker2000 ^{**}	1	50		50		22
Olsen et al. 2005	3	100		42		31
Director Survey						
Knapp et al. 1993 ^{***}	218	96	218		20	24
Richter et al. 2004	408	59	408		19	22 ^{*****}
Director & Staff Survey						
Walsh et al. 2005b	260	60	213	204	27	36 ^{*****}

* All percentages rounded to nearest whole number.

** Study reported results for two time points, before and after an intervention. Tabled data reflect the first time point only.

*** Response rates are estimated based on number of surveys mailed out to treatment centers to be distributed to staff.

**** Due to missing data N=735 for most analyses.

***** Directors' estimate of staff smokers.

***** Percentage is from staff surveyed. Mangers estimated that 24.2% all staff smoked and staff estimated that 30.3% of all staff smoked.

TABLE 2
Summary of Barriers to Providing Smoking Cessation in Substance Abuse Treatment Settings*

Source	Resource Limitations				Beliefs			Other Factors			
	Lack of staff knowledge or training	Lack of staff time	Lack of onsite smoking cessation services	Inadequate staffing or support	Lack of reimbursement	Perceived risk to sobriety	Other addiction is more important	Clients aren't interested in quitting	Smoking is helpful	Lack of demand	Staff are smokers
Staff Surveys											
Bobo & Gilchrist 1983											✓
Bobo, Slade & Hoffman 1995	✓		✓								✓
Hahn Warnick & Plemmons 1999	88% **						61%			***	✓
Gill & Bennett 2000	✓					18%					✓
Olsen et al. 2005		✓				21%					
Fuller et al. 2007			✓								
Director Surveys											
Knapp et al. 1993 ****	21%					20%					
Willenbring et al. 2004	20%	35%		19%						15%	
McCool et al. 2005	29%			14%	12%		19%	27%			
Richter 2006						*****	*****		14%		
Director & Staff Surveys											
Walsh et al. 2005b *****	M: 31%	M: 53%				M: 37%		M: 35%	M: 13%		M: 28%
	S: 37%	S: 55%				S: 47%		S: 41%	S: 17%		S: 34%

* Barriers included in the table are presented in percentages reflecting participant responses to survey items. A check mark indicates that the barrier was not presented as a percentage, but as a relationship. For example, Bobo, Slade and Hoffman (1995) reported that greater knowledge of nicotine addiction increased likelihood that counselors would address smoking with their clients.

** Percentages are rounded to the nearest whole number.

*** Participants reported few client requests for smoking intervention (mean of one request per month, SD = 2.7).

**** Knapp et al. collected survey data in two cross-sections, in 1988 and 1990. Data reported here are for the 1990 cross-sectional sample.

***** Approximately 25% of respondents had advised patients to delay quitting smoking. Lack of staff time and staff being smokers themselves were among reasons listed, however the percent of respondents endorsing these items were not provided.

"M" indicates percentage among managers; "S" indicates percentage among staff. Percentages for staff reporting "lack of staff time" and "staff are smokers" reflect the combined responses for "very important" and "quite important" in Table 3 (pg 241) of the article.