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Title: Smoking cessation care provision in Australian alcohol and other drug treatment services: a cross-sectional survey of staff self-reported practices

Running head: Smoking cessation care in AOD treatment

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Abstract

Introduction: Clinical practice guidelines recommend alcohol and other drug (AOD) services assess client's smoking status and offer smoking cessation care (SCC) to all smokers. The aim of this study was to examine Australian AOD program staff report of recommended SCC practices: assessment and recording of smoking status; and the provision of 9 types of SCC. The study also assessed how the decision to provide SCC is made and the AOD program service and AOD staff characteristics associated with the provision of SCC.

Methods: Between July-October 2014, treatment staff from 31 Australian AOD services participated in an online cross-sectional survey. In addition, a site contact at each service was interviewed to gather service related data.

Results: Overall, 362 AOD program staff participated (response rate = 57%) and 62% estimated that client smoking status was recorded for the "majority or all" of their clients. About a third (33%) reported that they "always" provide verbal advice to their clients to quit smoking, 18% "always" offered free or subsidized NRT and 16% "always" followed-up to check on client quit progress. Thirty percent reported that the decision to provide SCC was made on a client by client basis and 26% offered SCC only when the client requested assistance. Government-managed services, age and gender of AOD program staff were significantly associated with the provision of SCC.

Conclusion: Most AOD program staff report that smoking status is recorded for the majority of their clients however, the frequency with which SCC practices are delivered is low and the decision to provide care is arbitrary.

Keywords: Substance abuse treatment center; tobacco smoking; smoking cessation care; practice; evidence-based treatment

1. Introduction

Tobacco smoking rates among clients in Australian alcohol and other drug (AOD) treatment have been estimated to be between 77% (Kelly et al., 2012) to 84% (Bowman et al., 2012). Comparatively high rates are also reported in US (80.2%) (Guydish et al., 2011; Rees, Reehlmann, Stewart, & Jones, 2008) and UK (88%) (Cookson et al., 2014) addiction treatment facilities. A recent systematic review reported an international pooled estimate of smoking prevalence in addiction treatment of 87% (Guydish et al., 2016). Consequently, AOD clients experience an elevated burden of tobacco-related disease (Bandiera, Anteneh, Le, Delucchi, & Guydish, 2016) and are more likely to die as a result of their tobacco use, than their other drug addictions (Hurt et al., 1996). This highlights the importance of ensuring that support is provided to help clients address their smoking while engaged with treatment services.

Clinical practice guidelines for treating tobacco smoking within health care services (Fiore et al., 2008; NSW Ministry of Health, 2015) stipulate that tobacco smoking status should be assessed and recorded for all clients, and that all identified smokers should receive evidence-based SCC including: verbal advice to quit smoking, pamphlets or other written information about quitting smoking, offer of subsidized or free nicotine replacement therapy (NRT), referral to telephone Quitline, referral to other stop smoking services, referral to a GP or other doctor, prescription of Champix or Zyban, participation in an on-site quit smoking group program, and follow-up to check on quit smoking progress (Fiore et al., 2008; Walsh, Bowman, Tzelepis, & Lecathelinais, 2005a).

There are numerous studies that show that clients are highly interested in receiving this SCC while in treatment (Clarke, Stein, McGarry, & Gogineni, 2001; Cookson et al., 2014). Studies also demonstrate the effectiveness of SCC with AOD clients and show that addressing tobacco smoking while in treatment does not jeopardize other treatment outcomes

(Prochaska, Delucchi, & Hall, 2004). Concurrent, rather than sequential, treatment of tobacco and other substance abuse disorders is one of the most effective ways to address multiple addictions (U.S Department of Health and Human Services, 2014).

Studies show the provision of SCC practices within the AOD setting is variable (Cookson et al., 2014; Friedmann, Jiang, & Richter, 2008; Walsh et al., 2005a). Some studies, have shown staff rely on their own clinical judgement to decide which clients receive SCC (Walsh et al., 2005a), while others describe a client opt-in process, whereby SCC practices are only provided when client requests assistance and are motivated to quit (Richter & Ellerbeck, 2015). Unlike other substances in AOD services, tobacco smoking is estimated to be routinely assessed in only 44-87% of clients (Hahn, Warnick, & Plemmons, 1999; Hunt, Cupertino, Garrett, Friedmann, & Richter, 2012; Olsen, Alford, Horton & Saitz, 2005; Richter, Choi, McCool, Harris & Alhuwalia, 2004; Rothrauff & Eby, 2011; Tremain et al., 2016). Further, in terms of the provision of specific SCC practices, very few cross-sectional surveys of AOD staff have been conducted in Australia (Tremain et al. 2016; Walsh et al., 2005a) and internationally: UK (Cookson et al., 2014), Canada (Currie, Nesbitt, Wood & Lawson, 2003) and US (Bobo & Davis, 1993; Hahn et al., 1999; Hunt, Gajewski, Jiang, Cupertino, & Richter, 2013; Joseph, Nelson, Nugent & Willenbring, 2003; Knudsen, Muilenburg, & Eby, 2013; Knudsen & Studts, 2011; Muilenburg, Laschober, & Eby, 2015; Olsen et al., 2005; Richter et al., 2004; Rothrauff & Eby, 2011). These studies reveal that an estimated 25%-80% provide verbal advice to quit smoking (Bobo & Davis, 1993; Hahn et al., 1999; Tremain et al., 2016; Walsh et al., 2005a); 12%-40% provide NRT (Hunt et al., 2013; Knudsen & Studts, 2011; Muilenburg et al., 2015; Richter et al., 2004); 17%-38% provide individual or group smoking cessation counselling (Friedmann et al., 2008; Knudsen et al., 2013; Richter et al., 2004; Walsh et al., 2005a); 1%-30% provide prescription quit smoking

medication (Currie et al., 2003; Friedmann et al., 2008; Muilenburg et al., 2015; Walsh et al., 2005a).

In Australia the federal, state and territory governments provide funding to non-government and government managed AOD treatment organizations (Australian Institute of Health and Welfare, 2016). Government managed services are required by state and territory legislation to be smoke-free environments (Francey & Soulos, 2001; Grace, 2016). AOD treatment types include: withdrawal management, residential rehabilitation, outpatient counseling, opiate treatment/methadone and buprenorphine maintenance (Australian Institute of Health and Welfare, 2016). Staff at these services provide treatment to all clients regardless of client primary drug of concern or treatment needs.

Current evidence suggests that there are characteristics related to the AOD service and individual staff members that influence provision of SCC. For example, services are more likely to provide SCC if they have a total ban on smoking (Richter et al., 2004), written guidelines addressing tobacco smoking (Baca & Yahne, 2009), are government-managed services (Richter et al., 2004; Walsh, Bowman, Tzelepis, & Lecathelinais, 2005b) and provide smoking cessation training to their staff (Knudsen, Studts, Boyd, & Roman, 2010; Richter et al., 2004). For staff, those who report current tobacco use are less likely to address their clients' tobacco smoking (Bobo & Davis, 1993) or to participate in discussions about smoking, compared to non-smoking staff (Campbell, Krumenacker, & Stark, 1998). While these findings suggest that a number of factors contribute to the low provision of SCC, there is a need to identify whether additional characteristics influence the provision of SCC, such as number of years working in the AOD field, and staff age and gender in order for interventions to be tailored to target these individuals and improve their delivery of SCC.

Only two Australian studies have examined SCC practices; one conducted over a decade ago (Walsh et al., 2005a) while the other had a relatively small sample (including

only clinicians from one state and local health district) and did not assess clinically recommended practices such as follow-up to check on quit smoking progress or prescription of smoking cessation medicines (Tremain et al., 2016). Further, neither Australian study examined whether service or staff characteristics may be associated with the provision of SCC. Given the existing evidence, there appears to be a limited understanding in the Australian context of staff reported provision of SCC practices and the factors associated with the provision of such care. Therefore, the aim of this study was to examine Australian AOD treatment staff reporting of recommended SCC practices: firstly the assessment and recording of smoking status; and secondly, for smokers, the provision of nine types of SCC (1. verbal advice to quit; 2. written information; 3. offer of subsidized or free NRT; 4. referral to telephone Quitline; 5. referral to other stop smoking services; 6. referral to a doctor; 7. prescription of Champix or Zyban; 8. on-site quit smoking group program; and 9. follow-up). In addition, the study assessed how the decision to provide SCC is made and the service and staff characteristics associated with the provision of SCC.

2. Methods

2.1. Study design

An online cross-sectional survey with staff from AOD services conducted in July-October 2014. In addition, a site contact at each service was telephone interviewed to gather service related data.

2.2. Setting

A convenience sample of thirty-one AOD services in four states and territories of Australia: New South Wales (NSW), Australian Capital Territory (ACT), Queensland (Qld) and South Australia (SA) participated in the survey. Recruitment of AOD services from government organizations occurred through key contacts such as the directors of health

services, while for services from non-government organizations, state advocacy AOD groups disseminated expression of interest newsletters to their members. To be eligible, services needed to have face-to-face contact with more than 50 individuals per year. Overall, 32 services expressed interest in participating and all met study eligibility criteria. One service dropped out prior to study commencement leaving 31 services that completed the study.

2.3. Sample

Managers and staff were eligible if they had therapeutic client contact, in a role where treatment was part of their normal duties (individuals in administrative and other/unspecified roles were excluded) and were employed in a voluntary, casual, part-time or full-time basis at a participating service.

2.4. Procedure

The research team communicated with one staff member as the site contact for each service. The research team sent the site contact an invitation email containing the participant information letter and the hyperlink to the online survey for distribution to staff. Survey completion constituted consent. Weekly reminder emails (one per week for three weeks) were sent to all staff members. Ethical approval was obtained through the Hunter New England Local Health District's Human Research Ethics Committee (HREC), ACT Health HREC, SA Health HREC and the University of Newcastle HREC.

2.5. Measures

2.5.1. Staff online survey

The survey included 54 questions, items were designed to be brief and were based on existing questionnaires from similar studies (Walsh et al., 2005a; Walsh et al., 2005b) to allow for comparison. Items examined how the decision was made to provide SCC, the frequency with which SCC was delivered, AOD staff respondent characteristics and smoking-related variables.

2.5.1.1. Staff characteristics. Gender, age, education, smoking status, employment status, number of years employed at current treatment service, number of years employed in the AOD field, work role and primary substances addressed by the AOD service they are employed by were assessed.

2.5.1.2. Recording of client smoking status. Staff were asked “What is your estimate of the percentage of clients who have their smoking status recorded on file at your service?”

Response options were: 0%; 1%-25%; 26%-50%; 51%-75%; 76%-100%.

2.5.1.3. Provision of nine types of evidence-based SCC. Staff were asked to rate on a four point Likert-scale from 1=Never to 4=Always, “How often do you provide each of the following to your clients: verbal advice to quit smoking; pamphlets or other written information about quitting smoking; offer of subsidized or free NRT; referral to telephone Quitline; referral to other stop smoking service (iCanQuit, smoking cessation clinic); referral to a GP or other doctor; prescription of Champix or Zyban; participation in an on-site quit smoking group program; and follow-up to check on quit smoking progress”.

2.5.1.4. Decision to provide SCC. To examine how the judgement was made to provide SCC at treatment centers staff were asked: “How do you make the decision concerning whether or not to provide clients who smoke tobacco with assistance to quit smoking?” Response options were: assistance is offered to every client who smokes; assistance is offered on a client-by-client basis; and assistance is offered only if the client requests it.

2.5.2. Site contact telephone interview

2.5.2.1. Service characteristics. At the time of the online survey, a member of the research team called the site contact and verbally collected information on the following: government-managed or non-government managed service, AOD treatment type (residential rehabilitation/therapeutic community, opiate treatment/methadone and buprenorphine

maintenance, out-patient counselling, specialist withdrawal unit, other-harm minimization and other-area health) and location (major city, inner/outer regional area) based on the Accessibility/Remoteness Index of Australia (ARIA+) (Australian Bureau of Statistics, 2015; Hugo Centre for Migration and Population Research, 2015).

2.6. Statistical analysis

Descriptive statistics of staff and service characteristics are presented by frequencies; percentages for categorical variables and means (standard deviation [SD]) or median (interquartile range [Q1, Q3]) for continuous variables, depending on the distribution. Binary logistic regression was used to examine the association between staff and service characteristics and the provision of each SCC practice (sometimes/always compared to never/rarely). Variables included in the logistic regressions were selected a priori and included factors previously associated with the provision of SCC practices in the AOD setting ((government or non-government managed service (Richter et al., 2004; Shi & Cummins, 2015); role (Hunt et al., 2012); smoking status (Tajima et al., 2009; Teater & Hammond, 2009) and those not previously investigated (age, gender, number of years in the AOD field)).

Collinearity of variables was checked using variance inflation factors (VIFs). Correlation within individuals from the same service was examined by fitting a general estimating equation (GEE) model with and without a repeated statement for service and examining model fit. For all models, model fit was not improved (Quasi-information criterion [QIC] of more than 4 points less) and therefore logistic regression without clustering was used. Adjusted odds ratios with 95% confidence intervals and p-values were calculated for variables in the models. Significance was determined at $p < 0.05$. SAS 9.4 (SAS Institute Inc., Cary, NC, USA) was used for all analyses.

3. Results

3.1. Service characteristics

Most services were located within a major city (77%) and government-managed (58%) while 42% were residential rehabilitation services and 29% outpatient counselling services.

3.2. Staff characteristics

Overall, 882 staff were invited, 506 completed the survey with 362 meeting the criterion of providing therapeutic contact to clients (57% response rate). Participants had a mean age of 46 years (SD=12), 67% were female and 67% were university educated. About two-fifths of respondents identified as ex-smokers (43%), 31% were non-smokers and 25% were daily or occasional smokers. The most frequently identified roles were: Nurse (33%), Case-worker (22%) and Counsellor (15%) (Table 1).

3.3. Recording of client smoking status

Nearly two-thirds (n=159, 62%) of respondents estimated that 76-100% of clients receiving AOD treatment had their smoking status recorded on file. The remaining one-third of respondents varied in their estimated recording of client smoking status with twelve percent (n=32) estimating 51-75%, eight per cent (n=20) estimating 26-50%, eleven percent (n=29) estimating 1-25% and seven percent (n=18) estimating 0%.

3.4. Provision of nine SCC practices

Staff estimates of the provision of SCC practices are summarized in Table 2. Verbal advice to quit was the most frequently reported type of SCC practice 'always' provided (33%) followed by the offer of free or subsidized NRT (18%) and follow-up to check on quit smoking progress (16%).

3.5. Decision to provide SCC

Less than half (n=112, 44%) of staff reported that SCC was offered to every client who smoked; 30% (n=75) said they offered SCC on a client by client basis and 26% (n=67) indicated that they only provided SCC when requested by the client.

3.6. Staff and service characteristics associated with the provision of clinically recommended SCC to clients

The results of the multivariate regressions are presented in Table 3. No staff or service characteristics were found to be associated with four SCC practices: verbal advice to quit smoking, offer of free or subsidized NRT, referral to a GP or other doctor and follow-up to check on quit smoking progress.

Of the significant associations, older age was associated with higher odds of providing quit pamphlets or written materials (OR 1.03 95%CI 1.01, 1.06; p=0.01) and offering a prescription of a stop smoking medicine to clients compared with respondents who were younger (OR 1.03 95%CI 1.01, 1.06; p=0.02).

Respondents from government-managed services had three times greater odds than those from non-government managed services to refer clients to the telephone Quitline (OR 3.05 95%CI 1.78, 5.24; p<0.001), almost twice the odds of providing a referral to other stop smoking services than non-government managed services respondents (OR 1.97 95% CI 1.13, 3.41; p=0.02) but lower odds (OR 0.29 95%CI 0.15, 0.56; p<0.001) of providing their clients with a referral to participate in an on-site quit smoking group or program than staff from non-government managed services.

Gender was also found to be associated with Quitline referral; females had almost two times greater odds than males to refer clients to the telephone Quitline (OR 1.97 95%CI 1.17, 3.33; p=0.01), but had lower odds of offering a prescription of a stop smoking medicine to clients than male staff (OR 0.55 95%CI 0.32, 0.94; p=0.03).

4. Discussion

Our findings indicate that inconsistent assessment of client smoking status and variable decision making may be leading to the low provision of SCC practices. The decision to provide SCC is arbitrary or based on client request for help and is similar to that reported in another Australian study over 10 years ago (Walsh et al., 2005a), suggesting that little progress has been achieved over time in ensuring that all smokers are provided with SCC routinely. Limited systems and procedures may explain the observed lack of routine SCC provided to clients (Tajima et al., 2009). Alternate explanations include a lack of specific smoking cessation training to staff (Fiore et al., 2008).

This is the first study to examine AOD staff gender and age with the provision of specific SCC practices. The relationship between health care provider gender and the delivery of preventative care has demonstrated a gender bias whereby female staff are more likely to provide preventative care to their clients (Franks & Clancy, 1993; Lurie et al., 1993). In our findings, female staff were more likely to provide a referral to Quitline than male staff however, female staff were less likely to report providing a prescription of a stop smoking medication. This finding could be due to staff role with more male staff potentially holding a medical degree such as a doctor and therefore having the ability to prescribe this medication however further exploration of this finding is required. Increasing age of staff was also associated with providing a prescription of a stop smoking medicine as well as the provision of written materials such as pamphlets. It is unclear as to why older staff are more likely to provide this care than younger staff members.

Like other studies examining service factors associated with the provision of SCC in AOD treatment (Richter et al., 2004; Shi & Cummins, 2015), the results of our logistic regressions demonstrate that there is a significant association between government and non-government managed services and the provision of SCC practices. More specifically, AOD

staff from government-managed services were more likely to report providing their clients with a referral to telephone support such as Quitline and other stop smoking services such as the online website iCanQuit. However this finding was not consistent for all SCC practices, with staff from government-managed services also being less likely to provide a referral to an on-site quit smoking group. Staff from government-managed services may not be aware of on-site programs or on-site programs may not be available to their clients. Further research examining the availability of on-site smoking cessation programs across the types of AOD services is warranted.

Contrary to previous studies (Hunt et al., 2012), role (manager compared to other staff) and staff smoking status were not found to be associated with the provision of SCC. Individuals in a management role have been previously found to have greater odds of providing SCC (Hunt et al., 2012) however our results highlight that both managers and staff report delivering similar SCC practices to clients at their services. AOD staff who currently use tobacco have been found to have lower odds of delivering SCC (Knudsen, Boyd, & Studts, 2010). While rates of staff tobacco smoking in our sample (25%) are consistent with the AOD literature (14 to 45%) (Cookson et al., 2014; Guydish, Passalacqua, Tajima, & Manser, 2007) tobacco use was not associated with the provision of specific SCC strategies in our sample. This may be related to increased legislation for smoke-free environments and therefore may be impacting on the attitudes and practices of staff who smoke.

4.1. Implications for policy and practice

Our findings highlight that tobacco smoking is not on the treatment agenda for AOD services and that there is a need to make changes to the current culture and attitudes to ensure that tobacco smoking is assessed and treated. Suggested strategies to improve the practices of staff include organisational change approaches which involve transformation of current policies and protocols to ensure change at the service and staff level (Fiore, Keller, & Curry,

2007). To date only one organizational change intervention has been conducted with marginal success in increasing the provision of SCC to AOD clients (Guydish et al., 2012). Further investigation of the characteristics associated with greater provision of care will assist in the tailoring of organisational change interventions to address these characteristics to increase the likelihood of sustainable and consistent delivery of SCC in the AOD setting.

The finding that staff in government-managed services report providing more types of SCC would suggest that there are organizational factors influencing the provision of care. Given that government-managed services in Australia are required by law to be smoke-free environments and have written clinical care protocols it is possible that this would prompt treatment of tobacco smoking.

Training is essential to ensure change in staff practices (Perine & Schare, 1999) with previous studies revealing that limited provision of SCC may represent insufficient knowledge in this area (Baca & Yahne, 2009). Training should include information on ways to facilitate the delivery of evidence based practices such as referral to Quitline, provision of brief advice, distribution of NRT. Further, interactive skills components consisting of role plays involving patient-centered counselling with individualized feedback (Baca & Yahne, 2009; Miller, Sorensen, Selzer, & Brigham, 2006) to help develop staff interactional skills need to be provided.

4.2. Study strengths and limitations

Overall, good engagement by staff was achieved as illustrated by the 57% response rate, which is comparable to other surveys of health care providers (McCool, Richter, & Choi, 2005; Walsh et al., 2005a, 2005b). A good representation of multiple respondents from varying management and staff roles from each service was achieved, providing essential information from those who have direct client contact and are engaged in the treatment process.

However the generalizability of the study findings may be limited because the services that volunteered for the study may have been more interested and motivated in regards to tobacco control compared to the services that did not participate. The results are also limited in describing the situation in Australia, and may not generalize to other countries.

Another limitation is that the self-reported responses for the provision of each SCC practice provided by staff could potentially be inflated. However social desirability bias would have resulted in inflated estimates of SCC provision, and the expected direction of the bias would suggest that rates are even lower than reported.

5. Conclusion

Staff in Australian AOD services are reporting to not consistently assess client smoking status or deliver a range of SCC to their clients as recommended by clinical practice guidelines (Fiore et al., 2008; NSW Ministry of Health, 2015). Rather than offering SCC to all smokers, most staff are reporting to only provide support to those clients requesting it, or only offer to some clients. Staff working in government-managed services that have smoke-free policies reported higher rates of some SCC practices. Efforts to improve the delivery of routine and comprehensive SCC in the AOD setting are warranted.

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Conflict of interest

The authors report no conflict of interest.

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Table 1. Staff characteristics

Characteristic	n ^a	%
Gender		
Female	226	67
Male	111	33
Age in years (mean, SD)	46 (12)	
Education		
School certificate/ Higher school certificate	7	3
TAFE ^b certificate/ diploma	80	30
University undergraduate/ postgraduate degree	173	67
Smoking status		
Ex-smoker	140	43
Non-smoker	101	31
Daily/ Occasional smoker	82	25
Employment status		
Full-time	221	62
Part-time	122	34
Casual/ Volunteer	14	4
Number of years at service		
<1 year	40	11
1-3 years	97	27
4-6 years	78	22
7-9 years	48	13

≥ 10 years	93	26
Number of years in the AOD field		
<1 year	20	6
1-3 years	69	19
4-6 years	68	19
7-9 years	53	15
≥ 10 years	146	41
Role		
Nurse	119	33
Caseworker	79	22
Counsellor	55	15
Manager	42	12
Psychologist	20	5.5
Social worker	15	4.1
Doctor	15	4.1
Health educator	10	2.8
Researcher	3	0.8
Volunteer	2	0.6
Pharmacist	2	0.6
Main substances addressed by your service		
Heroin and other opioids	297	83
Alcohol	281	79
Psychostimulants (amphetamine, methamphetamine)	277	78
Cannabis	274	77
Benzodiazepines and other sedatives/ minor tranquilizers	238	67

New and emerging substances (stimulant-like substance, cannabis-like substance, hallucinogen-like substance)	161	45
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^a May not equal to 362 due to missing data

^b TAFE: Technical and Further Education

Table 2. Staff report of the provision of nine smoking cessation care practices provided to clients who smoke (n=362^a)

Smoking cessation care practice	Never	Rarely	Sometimes	Always
	n (%)	n (%)	n (%)	n (%)
Verbal advice to quit				
Offer of free or subsidized Nicotine				
Replacement Therapy				
Follow-up to check on quit smoking progress				
Pamphlets of written information about quitting smoking				
Referral to telephone Quitline				
Referral to a GP or other doctor				
Participation in an onsite quit smoking group or program				
Referral to stop smoking cessation service (e.g. iCanQuit)				
Prescription of smoking cessation medicine (e.g. Champix or Zyban)				

^a May not equal to 362 due to missing data

Table 3. Staff and service characteristics associated with staff-reported provision of smoking cessation care practices^a

	OR	95% CIs	P
Pamphlets or other written information			
Age (per year increase)	1.03	1.01, 1.06	0.01
Referral to Quitline			
Female (reference: Male)	1.97	1.17,3.33	0.01
Government-managed service (reference: non-government managed service)	3.05	1.78,5.24	<0.001
Referral to other stop smoking service			
Government-managed service (reference: non-government managed service)	1.97	1.13,3.41	0.02
Prescription of stop smoking medicine			
Female (reference: Male)	0.55	0.32,0.94	0.03
Age (per year increase)	1.03	1.01,1.06	0.02
Participation in onsite quit smoking program			
Government-managed service (reference: non-government managed service)	0.29	0.15,0.56	<0.001

^a Characteristics significantly associated with the SCC practice are shown in Table 3. Each logistic regression model included service ownership, gender, age, role, smoking status, number of years in the AOD field.