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## Substance Abuse Counselors' Implementation of Tobacco Cessation Guidelines<sup>1</sup>

Tanja C. Rothrauff, Ph.D.<sup>\*,2</sup> and Lillian T. Eby, Ph.D.<sup>\*,+</sup>

<sup>\*</sup>Institute for Behavioral Research, University of Georgia, 322 Psychology Building, Athens, GA 30602, Phone: 706-542-2444, tanja@uga.edu

<sup>+</sup>Applied Psychology Program, 325 Psychology Building, Athens, GA 30602, Phone: 706-542-0378, leby@uga.edu

### Abstract

This study assessed the extent of implementation of the Public Health Service tobacco cessation guidelines among a national sample of counselors working in five different types of substance abuse treatment programs. Further, we identified implementation patterns among counselors using cluster analysis and considered differences in counselor characteristics based on their cluster membership. Data were obtained from the 2008 Managing Effective Relationships in Treatment Services (MERITS I) project. Counselors ( $N = 615$ ) working in Clinical Trials Network (CTN) affiliated community treatment programs completed paper-and-pencil surveys. Implementation of the guidelines was inconsistent and selective. Counselors could be grouped into low versus high implementers. Some counselor characteristics differed based on their implementation cluster membership.

### Keywords

tobacco cessation; implementation research; evidence-based practices; substance abuse counselors

### Introduction

Tobacco cessation treatment efforts have garnered interest in a variety of health care settings including substance abuse treatment (SAT) programs. Clinical practice guidelines on tobacco cessation sponsored by the Public Health Service (PHS) have been developed to help clinicians address tobacco use with patients (Fiore et al. 2008). Expert panel recommendations in the “Treating Tobacco Use and Dependence: 2008 Update” include asking patients about their current and former tobacco use, advising them to quit, assessing their willingness to quit, assisting them in quitting, and arranging for follow-up contact. In addition, the panel suggests that clinicians emphasize specific problem-solving and skill-building techniques with patients interested in quitting their tobacco use (e.g., build support for quitting, help cope with cravings). The purpose of this study is to assess the implementation of the tobacco cessation guidelines (TCGs) among substance abuse counselors.

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<sup>2</sup>Please address all correspondence to Tanja Rothrauff, University of Georgia, 322 Psychology Building, Athens GA, 30602, Phone 706-542-2444; Fax 706-542-3275; tanja@uga.edu.

## Tobacco Cessation in Substance Abuse Treatment Programs

SAT programs are an ideal health care setting for promoting tobacco cessation and implementing the PHS recommended TCGs. Individuals with substance use disorders (SUDs) have a greater prevalence of tobacco use compared to the general population (Berggren et al. 2007; Centers for Disease Control and Prevention 2007). These individuals are also more heavily nicotine dependent (Hughes 2002; Sobell 2002) and report greater difficulties with tobacco cessation compared to individuals without SUDs (Hughes & Kalman 2006). Patients with SUDs are more likely to die from tobacco-related diseases compared to substance abuse related diseases (Hurt et al. 1996) and have more comorbidities (Saxon et al. 2003).

Despite the benefits associated with tobacco cessation, studies have shown that few SAT programs have tobacco cessation services, particularly in methadone maintenance facilities and outpatient programs (Friedmann, Jian & Richter 2008; Fuller et al. 2007; Richter et al. 2004). Ample clinical trials have shown no adverse effects in outcomes when tobacco cessation treatment was integrated into alcohol and SAT (Cooney et al. 2007; Grant et al. 2007; Reid et al. 2007; Lemon, Friedmann & Stein 2003). On the contrary, tobacco cessation was linked to greater abstinence from alcohol and other drugs, decreased risk of alcohol and drug relapse and decreased alcohol consumption (Baca & Yahne 2009; Weinberger & Sofuoglu 2009; Satre, Kohn & Weisner 2007; Barrett et al. 2006; Prochaska, Delucchi & Hall 2004; Lemon et al. 2003). One notable exception is a randomized controlled trial by Joseph and colleagues (2004) of concurrent compared to consecutive smoking cessation among patients with alcohol dependence. Although participation in tobacco treatment was greater in the concurrent group, prolonged alcohol abstinence was lower compared to the consecutive group.

Counselors in particular, because of their direct contact with patients, are in a unique position to implement the PHS recommended TCGs with all patients who use tobacco products. Screening patients for tobacco use to identify their need for treatment could easily be integrated as a basic step in the recovery process. Unfortunately, counselors who themselves use tobacco products are less likely than non-smokers to inquire about, address, promote, and support abstinence from tobacco use with their patients (Bernstein & Stoduto 1999; Campbell, Krumenacker & Stark 1998). This is important to note since Guydish and colleagues (2007) found that between 14% and 40% of staff in SAT programs smoke. Yet, few studies have explored the implementation of the TCGs specifically among substance abuse counselors.

Knudsen and Studts (2010) conducted a national study of counselors on the implementation of only one of the facets of the PHS guidelines—tobacco-related brief interventions. They examined whether counselors asked new patients about their current tobacco use and smoking status, advised tobacco users to quit, and assessed patients' willingness to quit. Counselors reported a moderate degree of implementation. Multiple organizational and individual-level factors such as managerial support, knowledge of PHS guidelines, attitudes toward tobacco cessation interventions, and tobacco use status, were associated with counselors' implementation of brief tobacco cessation interventions.

Olsen and colleagues (2005) investigated the extent to which counselors addressed smoking cessation. Their study was limited to three urban methadone treatment programs. Ninety-seven percent of counselors reported that they provided smoking cessation counseling. Counseling in their study was limited to addressing five issues with their patients: extent of smoking, readiness to quit, negative health implications related to smoking, advising patients to quit, and discussing treatment options. The authors also asked patients about the extent to which they had received smoking cessation counseling from their respective

counselors. Only 48% of patients noted that they were asked whether they smoked, were ready to quit, were advised about health implications, were advised to quit, and were presented with treatment options.

In the present study, we extend this sparse literature and go beyond previous limitations by examining the extent of implementation of two facets of the PHS recommended clinical TCGs among a national sample of substance abuse counselors working in five different SAT settings. In addition, we identify implementation patterns among counselors using factor analysis and cluster analysis. Finally, we consider differences in counselor characteristics based on their identified cluster membership.

## Methods

### Study Design and Sample

The national data were obtained from the Managing Effective Relationships in Treatment Services (MERITS I) project. MERITS I is a National Institute on Drug Abuse (NIDA) funded longitudinal project, conducted by researchers affiliated with the [authors' anonymity]. MERITS I utilizes the Clinical Trials Network (CTN) as a platform to gain a detailed understanding of the work experiences of both counselors and clinical supervisors. NIDA created the CTN with the goal of developing a bi-directional dialog between university-based researchers and affiliated community-based professionals that were interested in participating in clinical trials. Thus, evidence-based practices (EBPs) could be tested for effectiveness and efficacy as they were delivered by staff to patients, used to narrow the gap between innovation and practice integration, and to improve the quality of SAT (Hansen, Leshner & Tai 2002).

Treatment organizations were recruited during formal presentations at the CTN's 2004 External Affairs Subcommittee Meeting and the Community Treatment Program Caucus. Trained research assistants traveled to each participating site to administer the surveys to counselors previously identified by the administrators. Due to turnover and replacement, counselors not included on the list were eligible for participation as long as they had direct contact with patients in a therapeutic relationship (individual or group counseling sessions, or both). Group meetings were used for data collection during normal business hours, allowing all data collection to be completed in one or two sessions held in a single day. Surveys were distributed after a verbal explanation of the project and its confidentiality procedures, along with written consent forms. Counselors had 90 minutes to complete the survey, although the average time for completion was 30 minutes. Absent counselors had the option to complete and return their surveys in the mail. Participating treatment organizations received \$1,000 compensation and \$50 per completed counselor survey to off-set the staff time required to collect the data during normal business hours. All procedures were approved by the [authors' anonymity] Institutional Review Board.

Data were collected in person in 2008 via paper-and-pencil surveys from 658 of the 829 eligible counselors (79% response rate) working in 111 CTN-affiliated community treatment programs that were associated with 26 unique treatment organizations. Treatment programs are defined as relatively autonomous, free-standing operational units. Treatment organizations, in contrast, are defined as larger organizational structures with oversight and authority over participating treatment programs. All organizations had to be community-based to be eligible for participation. Programs solely based in prisons, Veteran's Health Administration programs, and driving-under-the-influence schools were excluded. The current study is limited to counselors who completed the items on tobacco cessation implementation, resulting in a final sample of 615 counselors. There were no statistically significant differences ( $p < .05$ ) in terms of gender, recovery status, education, race/

ethnicity, certification, and age between counselors who were included in the final sample and those who did not complete the tobacco cessation items.

## Measures

The implementation of the TCGs was assessed with 13 items that are based on two facets of the expert panel recommendations (Fiore et al. 2008; see Table 1). The first facet (5 items) measured the extent to which counselors ask patients about their tobacco use, ask non-smokers if they ever smoked, advise tobacco users to quit, assess patient willingness to quit, and use brief motivational interventions to enhance willingness to quit. The second facet (8 items) measured the extent to which counselors emphasize specific problem-solving and skill-building techniques with patients who are interested in quitting tobacco use, including developing a quit plan, providing self-help materials, giving patients the number of a quit line, encouraging patients to recognize triggers, emphasizing coping skills, focusing on risk of use and rewards of quitting, providing encouragement for quit efforts, and offering positive feedback. Response options for both facets ranged from 1 = *never* to 5 = *always*.

Counselor characteristics included their gender (0 = *male*, 1 = *female*), recovery status (0 = *not in recovery*, 1 = *in recovery*), highest level of education (0 = *less than master's degree*, 1 = *master's degree or higher*), race/ethnicity (0 = *minority*, 1 = *non-Hispanic White*), and certification status (0 = *not certified*, 1 = *certified substance abuse professional*). The type of treatment setting that counselors worked in included 1 = *correctional facility*, 2 = *methadone maintenance/opioid treatment program*, 3 = *hospital inpatient/detox program*, 4 = *non-hospital residential program*, and 5 = *other*. The extent to which counselors' formal educational training included coursework in substance abuse was recorded as 1 = *no extent*, 2 = *some extent*, and 3 = *great extent*. Counselors' age, experience in the behavioral health field, experience as a substance abuse counselor, and experience at this treatment facility, was coded in years. Counselors also provided their annual salary.

Counselors' smoking status was determined with the question, "Have you ever smoked more than 100 cigarettes in your lifetime?" Counselors who answered "no" were coded as 1 = *never smoker*. Counselors who answered "yes" but indicated in a follow-up question that during the past 30 days they smoked 0 cigarettes were coded as 2 = *former smoker*. Counselors who answered "yes" and indicated in a follow-up question that during the past 30 days they smoked 1 or more cigarettes were coded as 3 = *current smoker*. Self-report smoking measures are widely believed to be a reliable and valid way of determining smoking status among adults (e.g., Vartiainen et al. 2002; Caraballo et al. 2001).

## Data Analyses

First, we performed descriptive statistics for all variables. Second, principal components factor analysis (PCFA) with varimax rotation was conducted. Cronbach's alpha was calculated to determine reliability. PCFA was selected over confirmatory factor analysis because we were primarily interested in reducing the data and assessing underlying components. Third, we conducted two-step cluster analysis in SPSS 17.0 based on the components determined in the PCFA to identify clusters of counselors with distinctly different implementation patterns. Finally, we ran Rao-Scott chi-square statistics and general linear models for survey data to ascertain differences in counselor characteristics based on the identified clusters. Both types of analyses accounted for the nested data structure (counselors within organizations).

## Results

### Extent of Implementation of Tobacco Cessation Guidelines

As seen in Table 1, implementation of the individual TCGs for tobacco cessation was inconsistent and selective, depending on the guideline. None of the TCGs were “always” implemented by all counselors. Three TCGs were “always” or “most times” implemented by the majority (> 50%) of counselors—ask new patients whether they are current tobacco users, provide encouragement for patients’ efforts to quit tobacco use, and offer positive feedback as patients work toward tobacco cessation goals. Similarly, none of the TCGs were “never” implemented by all counselors. The two TCGs that were “never” or “not often” implemented by the majority (> 50%) of counselors included developing a quit plan for patients interested in quitting and giving patients the number of a quit-line.

Mean results displayed in Table 2 further suggest inconsistent implementation of the TCGs. Means for the individual items ranged from 2.56 (item 8) to 3.82 (item 1) on a 5-point scale (1 = *never* and 5 = *always*). That is, most TCGs were only “occasionally” implemented. Furthermore, standard deviations for the items were large (1.34 to 1.55), which illustrates variability in implementation among counselors.

### Principal Components Factor Analysis

Principal components factor analysis (PCFA) with varimax rotation was conducted to reduce the data and to determine underlying components that help explain the data. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (.91) and Bartlett’s test of sphericity ( $\chi^2 = 6286.63$ ,  $df = 78$ ,  $p < .001$ ) confirmed that PCFA was an appropriate method to use with these data. KMO is used to examine the proportion of variance that might be explained by underlying components. Values closer to 1.0 indicate that the data are appropriate. In terms of Bartlett’s test of sphericity, levels of significance that are smaller than .05 indicate that PCFA is appropriate, because the variables are related and can be used to detect structures.

Examination of the scree plot and the initial eigenvalues indicated 2 components based on the criteria that eigenvalues greater than 1.00 should be used for extraction. Sixty-nine percent of the variability in the original variables could be explained by the components. Component 1 included 4 items that closely represented the first PHS facet—ask new patients about their tobacco use, ask non-smokers if they ever smoked, advise patients to quit tobacco use, and assess their willingness to quit—and was labeled “Identify” (i.e., identify tobacco users who are interested in quitting). Component 2 included 8 items that represented the second PHS facet—develop a quit plan, provide self-help materials, give number to a quit-line, help recognize triggers, help develop coping skills for cravings, focus on risks and rewards, encourage efforts, and offer positive feedback—and was labeled “Counsel” (i.e., counsel and support tobacco users who are interested in quitting). One item (using brief motivational interventions to increase willingness to quit) loaded on both components and was omitted from subsequent analyses.

Reliability was conducted for the items that made up each component to ensure that the variables are measuring a single unidimensional latent component, which can be assumed for Cronbach alpha levels > .80. Alpha was .82 for component 1 (“Identify”) and alpha was .94 for component 2 (“Counsel”).

### Two-Step Cluster Analysis

In order to determine clusters of counselors with different implementation patterns, we conducted two-step cluster analysis based on the two components that were derived from the

PCFA. The mean was calculated across the four “Identify” items and across the eight “Counsel” items. The SPSS two-step cluster procedure is a scalable cluster analysis algorithm that can accommodate large data sets and both continuous and categorical variables. First, observations are pre-clustered into small sub-clusters. Second, sub-clusters from the pre-cluster step are grouped into the final clusters. The second step can be carried out based on a pre-determined number of clusters or the procedure can automatically determine the correct number of clusters, if they are unknown. Simulation results have found the two-step cluster analysis to be highly accurate (see SPSS 2001 for more detailed explanations).

Results indicated two distinct clusters—(1) counselors who scored significantly above the mean for the “Identify” and “Counsel” components, labeled as “High” implementers (51%); and (2) counselors who scored significantly below the mean for the “Identify” and “Counsel” components, labeled “Low” implementers (49%) of the TCGs (see Table 3). Further inspection of the Schwarz’s Bayesian Criterion (BIC) and BIC change auto-clustering results also suggested two clusters. Assessment of the Student’s *t*-statistic showed that both components of the PCFA significantly ( $p < .05$ ) contributed to the differentiation of each cluster.

### **Differences in Counselor Characteristics between High Implementers and Low Implementers**

Of the 13 counselor characteristics investigated, we found that treatment setting and annual income significantly differed between high and low implementers of the TCGs (see Table 4). Follow-up analyses showed that more high than low implementers worked in methadone maintenance programs. In contrast, more low compared to high implementers worked in correctional facilities. Finally, high implementers reported greater earnings than low implementers.

## **Discussion**

The current study examined the extent of implementation of two facets of the PHS-supported clinical practice guidelines on tobacco cessation (Fiore et al. 2008) among a national sample of substance abuse counselors working in five different SAT settings. In addition, we assessed implementation patterns among counselors using PCFA and cluster analysis, and considered differences in counselor characteristics based on the identified clusters.

### **Implementation Extensiveness**

We found that the implementation of the TCGs among counselors is inconsistent and selective, depending on the specific guideline. One explanation for this finding may be that counselors are overwhelmed by competing demands (e.g., co-occurring disorders, trauma, HIV, provision of wrap-around services such as housing, transportation, employment, childcare), the complex and myriad of issues that they are faced with, and, thus, have to prioritize demands. Tobacco cessation is often viewed as a low priority by many health care professionals and SAT programs (Friedmann et al. 2008; Fuller et al. 2007; Richter et al. 2004).

Furthermore, the great variability in implementation among counselors suggests that counselors likely exercise a great deal of discretion regarding the TCGs. Thus, efforts are needed to “sell” counselors on the consistent integration of asking, advising, assessing, assisting, and supporting patients regarding tobacco use and cessation. Strategies could include increasing awareness among counselors, supervisors, and patients of the positive

link between tobacco cessation and short- and long-term benefits (e.g., better health, reduced risk for alcohol/drug use and relapse). Instructing counselors on how to implement these relatively simplistic and brief TCGs with all patients may also be helpful. Considering counselors' time constraints, it would be important to point out the low effort and time commitment that is required in implementing the TCGs. For example, most counselors "never" or "not often" gave patients the number to a quit-line. Yet, handing a phone number to a patient requires little time and effort.

### **Implementation Patterns and Differences in Characteristics among Counselors**

The results from the cluster analysis, based on two components identified by the PCFA, showed that counselors could be grouped into two approximately equally distributed types of implementers—"High" versus "Low." High implementers were those counselors who had scored above the mean on both the "Identify" and "Counsel" implementation components. In contrast, low implementers were those counselors who consistently scored below the mean on the "Identify" and "Counsel" implementation components. It makes intuitive sense that those counselors who are already asking, assessing, and advising their patients about tobacco use and cessation follow-up their initial practice by offering further support to patients interested in quitting. It appears that the high implementers, although not perfect in their implementation, have taken steps in implementing the TCGs.

What distinguishes the high implementers from the low implementers? More high compared to low implementers worked in methadone maintenance programs, which is similar to previous findings (Olsen et al. 2005). In addition, studies have shown that patients in methadone programs are more interested in and motivated to quit tobacco use (Clarke et al. 2001). Thus, counselors may be more inclined to promote and support tobacco cessation efforts. In contrast, more low compared to high implementers worked in correctional facilities. This finding may be linked to the nature of community-based correctional facilities within the context of SAT. For the most part, these settings are diversion programs primarily for adolescents. The criminal justice system can mandate adolescents to receive treatment for their SUDs rather than being sent to a youth detention center or adult prison. Counselors may have to prioritize the treatment of alcohol and illegal substances over tobacco cessation. In addition, court mandated treatment coverage may be limited to specific types of treatment options that do not include tobacco cessation.

Finally, we found that high implementers reported greater annual incomes than low implementers. This finding may be a function of where these counselors are working. For example, counselors with higher incomes may be more likely to work in upscale and state-of-the-art SAT programs, have patients with greater insurance coverage, and have patients who are more involved in and demanding in terms of their treatment. As a result, these counselors may have more resources available and more motivation to implement innovations such as tobacco cessation into their SAT.

### **Study Limitations and Conclusion**

Our data were collected from counselors affiliated with the CTN and findings may not generalize to counselors working in non-CTN-affiliated SAT programs. Researchers have found demographic differences between CTN-affiliated and other counselors (Knudsen, Ducharme & Roman 2007). However, these differences were not linked to the measures in their model, which suggests limited bias. Additional support for limited bias rests with the indicators that the CTN-affiliated programs represent diverse cross-sections of treatment programs including CTPs from all major treatment modalities. Additionally, CTN nodes are located in 26 states in every major geographic region of the country.

Furthermore, our findings are based on counselors' self-reports of their extent of implementation of the TCGs. It is possible that counselors over-reported their level of implementation and provided responses that they thought would be more appropriate and in accordance with what their program and the researchers wanted to hear. We would argue that if self-report bias were an issue, we would most likely have seen much higher reports of TCG implementation. In contrast, we found inconsistent and selective implementation among substance abuse counselors. Observational studies on how and to what extent counselors use the TCGs would provide some answers to the common concern surrounding self-report bias.

Another limitation is related to the type of treatment setting in which counselors worked. A sizeable number of counselors (38%) noted that they worked in "other" settings (i.e., not correctional facility, methadone maintenance, hospital inpatient, or non-hospital residential program). Although there were no statistically significant differences between high and low implementers in "other" settings, it would be interesting to know more about these types of settings. More nuanced categories of "other" settings (e.g., those offering detoxification versus those who do not) may result in significant differences between high and low implementers.

A final limitation lies with the cluster analysis. There are different types of algorithms for cluster analyses (e.g., two-step, hierarchical, K-means) with no general standards of what constitutes the "best" method. Selection and interpretation of the cluster results is also partially subjective. Consequently, in addition to the two-step cluster analysis, we conducted hierarchical and K-means cluster analyses. Examination of the various results supported the number and types of factors selected in this study. Therefore, we are reasonably confident in our findings.

Our study adds to the sparse but emerging literature on the implementation of TCGs among counselors in SAT programs. Findings regarding the inconsistent implementation, typology of high and low implementers, and differences in counselor characteristics by implementation pattern provide a greater understanding of the barriers and facilitators of the routine use of the TCGs. The results can also help interventionists develop better approaches to promoting the implementation of the TCGs among counselors working in diverse SAT programs. Counselors are in a prime position to capitalize on the crucial opportunity for preventing tobacco related deaths and morbidity, reducing health care costs, and reaching public health goals by routinely integrating the TCGs into their daily practice.

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**TABLE 1**  
 Extensiveness of Counselors' Implementation of Clinical Practice Guidelines on Tobacco Cessation

Variable	Never	Not Often	Occas.	Most times	Always
	1 N (%)	2 N (%)	3 N (%)	4 N (%)	5 N (%)
1. ask new patients whether they are current tobacco users	63 (10)	68 (11)	80 (13)	110 (18)	292 (48)
2. ask non-smokers if they have ever smoked	133 (22)	124 (20)	88 (14)	84 (14)	180 (30)
3. advise current tobacco users that they should quit	105 (17)	88 (15)	161 (26)	123 (20)	135 (22)
4. assess current tobacco users for their willingness to quit	96 (16)	108 (18)	148 (24)	111 (18)	144 (24)
5. use brief motivational interventions to increase willingness to quit	144 (24)	122 (20)	154 (25)	111 (18)	81 (13)
6. develop a "quit plan" for patients interested in quitting their tobacco use	190 (31)	144 (24)	106 (17)	80 (13)	93 (15)
7. provide patients with self-help materials about tobacco cessation	145 (24)	111 (18)	121 (20)	119 (19)	117 (19)
8. give patients the number of a quit-line	213 (35)	123 (20)	95 (15)	78 (13)	102 (17)
9. encourage patients to recognize triggers of tobacco use	123 (20)	108 (18)	130 (21)	121 (20)	128 (21)
10. emphasize development of coping skills to deal with tobacco craving	117 (19)	116 (19)	127 (21)	126 (21)	119 (20)
11. focus on risks of continue tobacco use and rewards of quitting	99 (16)	98 (16)	152 (25)	121 (20)	143 (23)
12. provide encouragement for patients' efforts to quit tobacco use	74 (12)	64 (10)	136 (22)	150 (25)	189 (31)
13. offer positive feedback as patients work toward tobacco cessation goals	70 (11)	60 (10)	115 (19)	163 (27)	204 (33)

TABLE 2

Means, Standard Deviations, and Principal Components Factor Analysis Results

Variable	<i>M</i> <sup>a</sup>	<i>SD</i>	Components	
			“Identify” <sup>b</sup>	“Counsel” <sup>c</sup>
1. ask new patients whether they are current tobacco users	3.82	1.39	<b>.82</b>	.14
2. ask non-smokers if they have ever smoked	3.09	1.55	<b>.82</b>	.05
3. advise current tobacco users that they should quit	3.16	1.38	<b>.66</b>	.38
4. assess current tobacco users for their willingness to quit	3.16	1.39	<b>.72</b>	.43
5. use brief motivational interventions to increase willingness to quit <sup>d</sup>	2.78	1.34	.55	.60
6. develop a “quit plan” for patients interested in quitting their tobacco use	2.58	1.43	.43	<b>.66</b>
7. provide patients with self-help materials about tobacco cessation	2.92	1.44	.19	<b>.82</b>
8. give patients the number of a quit-line	2.56	1.49	.06	<b>.74</b>
9. encourage patients to recognize triggers of tobacco use	3.04	1.42	.27	<b>.84</b>
10. emphasize development of coping skills to deal with tobacco craving	3.02	1.40	.21	<b>.87</b>
11. focus on risks of continue tobacco use and rewards of quitting	3.18	1.38	.27	<b>.84</b>
12. provide encouragement for patients’ efforts to quit tobacco use	3.52	1.34	.31	<b>.80</b>
13. offer positive feedback as patients work toward tobacco cessation goals	3.61	1.34	.30	.77
Cronbach’s alpha			.82	.94

<sup>a</sup>Scale of 1 = *never*, 2 = *not often*, 3 = *occasionally*, 4 = *most times*, 5 = *always*;

<sup>b</sup>Identify patients who are interested in quitting;

<sup>c</sup>Counsel and support patients who are interested in quitting;

<sup>d</sup>Omitted from subsequent analyses due to cross-loading.

TABLE 3

Cluster Analysis: Counselor Patterns of Implementation of Tobacco Cessation Guidelines

Variable	Total Sample	Clusters	
		High Implementers <sup>a</sup>	Low Implementers <sup>b</sup>
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
“Identify” <sup>c,d</sup>	3.28 (1.16)	4.07 (.74)	2.46 (.92)
“Counsel” <sup>c,e</sup>	3.04 (1.18)	3.93 (.71)	2.10 (.78)

<sup>a</sup>*N*=314 (51%);

<sup>b</sup>*N*=301 (49%);

<sup>c</sup>Scale of 1 = *never*, 2 = *not often*, 3 = *occasionally*, 4 = *most times*, 5 = *always*;

<sup>d</sup>Identify patients who are interested in quitting;

<sup>e</sup>Counsel and support patients who are interested in quitting.

TABLE 4

Differences in Counselor Characteristics between High Implementers and Low Implementers of Tobacco Cessation Guidelines

Variable	Total Sample ( <i>N</i> = 615)	High Implementers ( <i>n</i> = 314)	Low Implementers ( <i>n</i> = 301)	$\chi^2$ or <i>F</i>
Female ( <i>n</i> , %)	412 (67)	222 (71)	190 (63)	3.83
In Recovery ( <i>n</i> , %)	259 (43)	124 (41)	135 (46)	1.48
Master's Degree ( <i>n</i> , %)	305 (50)	162 (52)	143 (48)	1.00
Non-Hispanic White ( <i>n</i> , %)	386 (64)	195 (63)	191 (66)	.38
Certified Substance Abuse Professional ( <i>n</i> , %)	319 (53)	171 (55)	148 (50)	2.41
Smoking Status ( <i>n</i> , %)				2.27
Never Smoker	264 (43)	135 (44)	129 (43)	
Former Smoker	165 (27)	90 (29)	75 (25)	
Current Smoker	179 (29)	84 (27)	95 (32)	
Treatment Setting ( <i>n</i> , %)				18.03**
Correctional Facility	29 (5)	6 (2)	23 (8)**	
Methadone Maintenance	105 (18)	65 (21)	40 (14)**	
Hospital Inpatient	62 (10)	35 (12)	27 (9)	
Non-Hospital Residential	173 (29)	78 (26)	95 (32)	
"Other"	230 (38)	121 (40)	109 (37)	
Extent to which formal educational training included coursework on substance abuse ( <i>n</i> , %)				2.40
Not at All	69 (11)	31 (10)	38 (13)	
Some Extent	280 (46)	138 (44)	142 (47)	
Great Extent	262 (43)	142 (46)	120 (40)	
Age ( <i>M</i> , <i>SD</i> )	42.35 (12.55)	42.94 (12.61)	43.78 (12.50)	.32
Annual Income/\$1,000 ( <i>M</i> , <i>SD</i> )	34.19 (9.51)	35.81 (9.93)	32.51 (8.76)	6.58*
Experience in Behavioral Health/yrs ( <i>M</i> , <i>SD</i> )	9.71 (8.09)	9.95 (8.25)	9.45 (7.92)	.41
Experience as SA Counselor/yrs ( <i>M</i> , <i>SD</i> )	6.81 (7.01)	7.06 (6.68)	6.55 (7.33)	.65
Experience at this Facility/yrs ( <i>M</i> , <i>SD</i> )	4.39 (4.92)	4.43 (4.81)	4.33 (5.05)	.07

\*  $p < .05$ ;\*\*  $p < .01$ .