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Attitudes and Training Needs of New England HIV Care and Addiction Treatment Providers: Opportunities for Better Integration of HIV and Alcohol Treatment Services

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Abstract

Objectives—Unhealthy alcohol use is common among HIV-infected patients and contributes to co-morbidities, cognitive decline, unprotected sex, and poor medication adherence. Studies consistently show missed opportunities to address unhealthy alcohol use as part of care. Although treatment of other drug use has been integrated into HIV care in some settings, more information is needed regarding provider attitudes regarding the need for integration of alcohol treatment and HIV care.

Methods—We surveyed 119 HIV and 159 addiction providers regarding the following domains: existing knowledge, desire for new knowledge (with subdomains relative advantage, compatibility, and complexity of integrating knowledge), and individual and program development needs. Scale scores for each domain were correlated with demographics to identify factors associated with training need.

Results—Both HIV and addiction providers reported agreement with statements of existing knowledge and the need for additional skills. The priority attributed to training, however, was low for both groups. Knowledge and perceived prevalence of HIV and unhealthy alcohol use increased with years of experience. Perceived prevalence correlated with compatibility but not the relative advantage of training.

Conclusions—Though addressing alcohol use and HIV was acknowledged to be important, the priority of this was low, particularly early career providers. These providers may be important targets for training focusing on motivating coordination of care and skills related to assessment and counseling.

Keywords

HIV; alcohol; addiction treatment; education

INTRODUCTION

Hazardous alcohol use is a significant cause of morbidity and mortality for all populations.¹ For people living with HIV, alcohol poses unique risks.^{2, 3} Hazardous drinking is highly prevalent among persons with HIV, with rates as high as twice that seen in the general population.^{3, 4} Alcohol use is associated with increases in unprotected sex or unsafe drug use practices increasing the risk of acquisition of HIV and transmission of HIV to others.^{5–15} Alcohol abuse and dependence, similar to other substance use disorders, leads to reduced adherence to antiretroviral medications increasing risk of resistance development and infectious complications of HIV.^{16–19} Independent of adherence, alcohol may also lead to more rapid reductions in CD4 count by apoptosis and other mechanisms.^{20–22} Heavy alcohol use is a well-established cause of liver disease, one of the most important causes of mortality among persons living with HIV.^{23, 24} The risk of liver disease is amplified for the estimated 16% of persons co-infected with viral hepatitis.^{25, 26} Alcohol may also accentuate cognitive decline associated with HIV and hepatitis C.²⁷

Disparities in access to substance abuse treatment and mental health services have led to calls for coordinated and, where possible, integrated HIV primary care and substance abuse treatment.^{28–33} This need is particularly acute for persons dually diagnosed with mental health and substance abuse disorders.^{31, 34–36} Although some models exist for integrating treatment for opioid and other drug use into HIV care, there remains a need for integrated programs addressing hazardous drinking as part of comprehensive HIV primary care.^{37–42} A significant number of persons with active substance use disorders besides HIV report levels of drinking that may be hazardous and that confer independent or additive risks with regard to transmission and their health.¹⁵ Failure to address alcohol use in the context of substance abuse treatment may reduce the impact of these treatment programs on the health of individuals and transmission in the community.

Though studies have demonstrated the efficacy of brief interventions in primary care to reduce alcohol use, these interventions remain underutilized.^{43, 44} In studies of primary care physicians, many report being uncomfortable addressing hazardous drinking.^{44, 45} Underreporting of alcohol use by patients, particularly in response to perceived stigmatization and pressure by clinicians, has been reported.⁴⁶ Where treatment decisions are linked to the demonstration of abstinence, as in consideration for hepatitis C treatment, underreporting may be more common.⁴⁷ The challenges in performing an effective assessment of alcohol use are compounded by the lack of time available in most clinical encounters to address these challenging issues.⁴⁸ In a study of HIV providers in New York, it was found that having a fixed case load, increased duration of time in practice, exposure to information on HIV and alcohol use, and perceived self-efficacy were important determinants for use alcohol interventions in practice.⁴⁹ There have been no studies addressing the role or the challenges of addressing HIV care in the context of alcohol

treatment. Although the above studies provide some important information about barriers to the integration of HIV and alcohol care, little is known about providers' specific perspectives with regard to integrating these alcohol treatment and HIV care services and their specific educational needs in this area.

Though the available clearly demonstrates the importance of addressing the interaction between alcohol use and HIV, to facilitate provider engagement in this area a better understanding of the needs and perspectives of providers in the context of HIV care and alcohol treatment is needed. We undertook a parallel survey of New England addiction treatment providers and HIV care providers to assess attitudes and knowledge regarding the interrelationship of alcohol and HIV treatment and resources needed to address these issues in their individual practices. We additionally sought to correlate provider beliefs with provider characteristics in order to guide targeting of educational programming. The goal of this work is to identify key attitudes and educational needs which may impact uptake of best practices in HIV and substance treatment settings.

MATERIALS AND METHODS

Providers were identified through e-mail listserves for the New England AIDS Education Training Consortium (NEAETC) which included 5,007 addresses and the Addiction Technology Transfer Center of New England (ATTC-NE) which included 2,194 addresses. Providers were contacted via email with a link to an electronic survey hosted by Survey Monkey. The email explained the purpose of the research study. Surveys were distributed in July of 2011 and responses collected by August of 2011. In order to increase uptake for the surveys, a reminder email was sent. Participation was anonymous and uncompensated. HIV providers were asked questions in each domain regarding alcohol and integrated services for HIV and alcohol treatment. Similarly, addiction providers were asked questions about HIV and the integration of HIV-related counseling into alcohol treatment. Study procedures were approved by the Institutional Review Board at Brown University.

Survey questions were rated on a 5-point Likert scale rating the degree of agreement with each statement and were divided into three broad domains: Existing Knowledge/Resources (e.g. *"I am aware of who is getting infected with HIV locally"* and *"I am capable of assessing alcohol use and unhealthy drinking in my patients."*), Desire for New Knowledge/Resources (e.g. *"Gaining additional knowledge about HIV would improve my ability to provide effective clinical care"* and *"Resources on unhealthy drinking would be helpful to my clinical practice."*), and Individual/Organizational Capacity for Change (e.g. *"I need more training to effectively assess client problems and needs relating to HIV"* and *"I need more training to effectively assess client problems and needs relating to unhealthy drinking."*).

The items in the Desire for New Knowledge/Resources domain were generated for this study based on the framework of Diffusion of Innovations Theory (Rogers, 2003). This theory has been widely applied across diverse fields of study (e.g., agriculture, medicine) and provides a detailed framework for how innovations are transferred from research and development to routine practice. As applied in this study, it provides an empirically-

supported framework for characterizing attitudes that are predictive of the eventual utilization of new knowledge and/or resources. Respondents provided ratings of the three attributes of an innovation believed to most strongly contribute to the decision to adopt a new procedure or innovation.⁵⁰ These attributes included the Relative Advantage of incorporating additional training, the Compatibility of additional training with the providers practice, and the Complexity of integrating additional training into practice. Each subscale consisted of 3 or 4 items scored from 1 (strongly disagree) to 5 (strongly agree). Items development was informed by Diffusion of Innovations Theory in the context of the potential uses of new knowledge and resources for clinical providers (sample item: "Resources on HIV/alcohol problems would be helpful to my clinical practice"). Items were reviewed by researchers with extensive experience in either dissemination, HIV, or alcohol use disorders. Complexity questions were framed with reverse scoring such that high levels of agreement indicated that the level of complexity was perceived to be low. The Individual and Organizational Capacity for Change domain examined individual and organizational capacity for change. Questions addressing capacity for change were selected from Texas Christian University Organizational Readiness for Change Scale with representative questions selected for each scale.⁵¹

Survey data were transferred to SPSS for statistical analysis. Scale scores were calculated by determination of the mean score for all the component questions for an individual. Respondents missing greater than 20% of items on any scale were set to missing for that scale. Means and standard deviations were assessed amongst respondents for all individual items as well as all scale scores. Pearson correlation coefficients (r) were calculated to evaluate the association between two practitioner characteristics (number of years providing direct care to HIV/alcohol patient population; perceived number of patients they treat annually who are affected by alcohol or HIV, respectively) and the six subscales related to training needs.

RESULTS

Respondent demographics for each group of treatment providers are presented in Table 1. The response rate for the HIV providers was 3% and for the addiction providers was 5%. Providers for both groups were predominantly White, non-Hispanic, and female. Providers had a range in duration of their professional experiences, with a mean and median of greater than 15 years' experience in both groups. Amongst HIV providers, 23% were nurses, 21% social workers, 14% were advance practice nurses, 11% were physicians, 3% were physician assistants, and the remainder included health educators, community health workers, behavioral health professionals, psychologists, clergy, substance abuse professionals and other public health professionals. Approximately 40% of HIV providers were direct care providers or clinicians, 28% case managers, and 6% patient educators. Amongst alcohol service providers, 43% identified themselves as substance abuse professionals, 23% as social workers, 20% as behavioral health professionals, with the remainder including nurses, psychologists, health educators, and other public health providers. Over half (54%) of alcohol service providers were direct care providers and 3% patient educators.

Comparison between HIV and Alcohol Treatment Providers

The survey instrument and mean scores for each item are presented in Table 2. Independent *t*-tests were used to compare HIV and addiction treatment providers on each of the six scale scores. The groups did not differ significantly on any scale score.

Addiction Providers

Existing Knowledge and Resources—The scale score for existing knowledge was 3.82 indicating some confidence in their knowledge related to HIV. Addiction providers expressed agreement or strong agreement with statements of knowledge of HIV transmission (99%), treatment (83%), and medications and side effects (50%). Agreement with knowledge of the epidemiology was similar, with the 65% reporting knowledge locally and 66% globally. Seventy-four percent reported knowledge of the interactions between HIV and other sexually transmitted diseases and 71% for knowledge about the lifestyles of highly impacted populations. Eighty-two percent reported agreement with statements of competency to counsel patients about safe sex.

Desire for New Knowledge and Resources—Addiction providers expressed some desire for new knowledge about HIV with greater than 77% agreeing with the statements of advantage to clinical practice (scale score 3.74). Only 40%, however, reported HIV to be a priority compared to other areas. Eighty-five percent thought resources related to HIV would be helpful to their clients and 86% thought HIV is a relevant consideration in working with clients (scale score for compatibility 3.97). Fewer agreed that clients would be receptive to resources related to HIV (58%). Most providers reported it would be easy to incorporate resources related to HIV into clinical practice (80%), to dedicate time to learn about HIV (71%) and to apply new skills learned from training as part of their practice (72%). The scale score for complexity was low at 2.12, indicating providers felt that it would complex to integrate new knowledge or skills into their practice.

Individual and Organizational Capacity for Change—Addiction service providers reported weaker agreement with regard to their perceived need for training to assess problems related to HIV (57%) and to increase patient motivation to participate in treatment (53%). They agreed somewhat more with the need for additional clinical skills (71%) and additional knowledge of available services (66%). Addiction service providers expressed similarly modest agreement with the need for program resources to improve care for patients living with HIV with the highest agreement noted with the need for resources to raise the quality of counseling and referral services for HIV (74%). Scale scores for the capacity for change for addiction treatment providers were 3.58 for individual training or resources or and 3.61 for program resources.

Correlation among Scale Scores—Similarly, among addiction treatment providers, the more years' experience they had providing direct patient care, and the greater the perceived prevalence of HIV among their own patients, the greater they rated their current knowledge about HIV. However, years of service and perceived prevalence of HIV among their patients were not related to individual needs for new knowledge and resources in addiction care

providers. Those with higher perceived prevalence of HIV among their patients also saw addressing HIV as more compatible with their addiction treatment (see Table 4).

HIV Providers

Existing Knowledge and Resources—The scale score for existing knowledge was 3.87 indicating some overall confidence in providers knowledge related alcohol and alcohol treatment. Although HIV care providers reported a high level of agreement with knowledge of the ways alcohol can affect HIV transmission (93%) and the ability to assess alcohol misuse and refer for appropriate therapy (85%), they were less likely to report that they received formal training related to the management of alcohol misuse (41%), that they have knowledge of guidelines for hazardous drinking (62%). Eighty-seven percent reported that they routinely assess alcohol and other drug use as part of HIV care visits and 80% reported that they could recognize alcohol dependence. Despite this confidence, only 54% percent of providers reported agreement or strong agreement with regard to their knowledge of the current recommendations related to hazardous drinking and 37% reported agreement or strong agreement with regard to having received formal training related to alcohol addiction treatment. 54% of HIV providers expressed agreed or strongly agreed that any drinking is hazardous for persons with HIV.

Desire for New Knowledge and Resources—HIV providers tended to agree that addressing alcohol use is relevant to their practice, that resources would be helpful, and that improving their skills would enhance their abilities to provide care (scale score for relative advantage 3.85). Only 39%, however, agreed or strongly agreed that training related to unhealthy drinking is a priority compared to other education topics. Though a high number agreed that addressing unhealthy drinking is compatible with their practice (scale score 4.04), a smaller proportion reported that patients would be receptive to receiving those resources (43%). The complexity scale score was low at 2.17 indicating that providers felt that it would not be complex to integrate new skills or resources into their practice.

Individual and Organizational Capacity for Change—Both individually (scale score 3.70) and at a program level (scale score 3.75), HIV and addiction providers showed some agreement with the need for additional training and resources. HIV care providers reported some agreement with regard to the need for training related to community resources to help clients with unhealthy drinking (71%) and knowledge and clinical skills specific to clients with unhealthy drinking (76%), and methods to help increase motivation in treatment for unhealthy drinking (79%). They expressed less agreement with regard to the need for training to assess clients for unhealthy drinking (57%) and to monitor client progress specific to unhealthy drinking (64%).

Correlation between Direct Provider Characteristics and Scale Scores—For HIV care providers, the more years' experience they had providing direct patient care and the greater the perceived prevalence of their own patients with unhealthy drinking, the greater they rated their current knowledge about alcohol and unhealthy drinking, and the less they indicated individual needs for new knowledge or resources. Those with higher

perceived prevalence of unhealthy drinkers in their practice also saw addressing unhealthy drinking as more compatible with their HIV care.

Interrelations among Scale Scores

Correlations among the scale scores ranged from 0.04 to -0.67 (see Table 4) and tended to be modest, indicating that the scales represented related but different (i.e., non-redundant) constructs. Scale scores also related to each other in expected ways, supporting their construct validity. For example, providers who felt their existing knowledge of alcohol or HIV was adequate were less likely to express a need for new knowledge or a need for more training. Providers who scored higher on perceived relative advantage for gaining new knowledge and resources indicated greater need for new knowledge and resources. Providers who considered knowledge of the other specialty as more compatible with their practice similarly endorsed greater relative advantage to gaining new skills and resources..

DISCUSSION

Most HIV care and addiction treatment providers reported moderate levels of confidence in their current knowledge related to HIV and alcohol use, respectively. HIV care providers reported high levels of confidence with regard to both the assessment of alcohol use and monitoring of patients with unhealthy drinking. Despite this, a significant portion of HIV providers did not report knowing the recommended guidelines for safe drinking and a similar proportion reported no formal training in alcohol treatment. HIV care providers reported broad agreement with the need for additional clinical skills training specific to persons with unhealthy drinking and to increase their patients' motivation to change their alcohol behaviors. HIV care providers also reported a need for improved knowledge of available referral resources and more effective processes for identification of clients and referral at the program level, though the priority attributed to training related to alcohol related issues was low. Most addiction providers also reported that their knowledge of HIV epidemiology, prognosis, and the lifestyles of highly impacted populations was adequate. Both at the individual and organizational level, addiction providers expressed some agreement with the need for improved knowledge related to HIV and program development to enhance services for persons with HIV. However, the priority attributed by alcohol treatment providers to learning about HIV was low.

These survey findings suggest provider ambivalence with regard to the efficacy of integrated or coordinated care interventions, evidenced by the lower scores on measures of expected patient receptivity. This finding is supported by prior qualitative reviews of alcohol screening in clinic settings, which highlight the barriers to enhancing screening of patient alcohol use; trials on the efficacy of brief interventions for alcohol risk reduction are notable exceptions to this trend.^{45, 48} HIV providers in our sample perceived a lack of patient receptivity and low readiness to change their alcohol behaviors. By contrast, among alcohol providers, their ambivalence may reflect a sense that HIV-associated interventions are beyond the scope of their care and not necessarily pertinent to their work. This perception may be reinforced by provider under-estimation of their client's risk for HIV.

The findings of the current study are important, because each group of providers deals with populations that may benefit from interventions based on understanding of the links between HIV and alcohol abuse. In evaluations of brief interventions to decrease problematic alcohol use, significant reductions in use were documented even in those who did not achieve abstinence.^{43, 52} The harms associated with alcohol can be attributed to either behavioral disinhibition related to intoxication leading to risky behaviors or to direct organ toxicity associated with high alcohol intake. In either case, reductions in use among those who continue use may still lead to improved health outcomes. The limited interest expressed by alcohol providers to obtain additional knowledge related to HIV may reflect the lack of a defined role for substance abuse treatment providers in supporting HIV care. Although substance abuse treatment programs may offer important opportunities to improve HIV care by providing on site HIV testing, engaging HIV infected persons who are out of care and linking them with medical services, and reinforcing prevention messages, in practice these programs may consider such activities as not part of their core mission. Improving channels of communication between substance abuse treatment providers and HIV care providers may help both sets of providers understand the importance of coordinated contacts in improving patient care.

The presence of competing priorities is an important concern for both groups. The lack of attributed priority to gaining further education related to HIV and alcohol use in this sample may reflect an inaccurate perception of the morbidity and mortality attributable to alcohol use in HIV-infected and at risk populations. Given the high prevalence of hazardous drinking noted in prior studies and the infrequent use of brief interventions in clinical practice, it is unlikely that the low priority reflects a baseline high state of knowledge either among HIV or addiction providers. The development of new educational strategies that train HIV care and substance use providers to provide information on the risks and co-occurrence of alcohol misuse and HIV and training in rapid assessment for either disease may be useful to help enhance provider engagement. Targeting of resources to providers early in their careers may be of particular benefit.

Limitations

This study presents the results of an anonymous survey to a heterogeneous group of providers both within the HIV care and alcohol service communities. No incentive for participation was provided and only a small minority of providers invited to participate in the survey did so. As such, results may be vulnerable to response bias, reflecting the views of those most interested in issues that cut across alcohol use and HIV. Assessments of providers' capability in addressing HIV and alcohol use are also limited by virtue of being self-report data which describes their performance relative to their perception of what is ideal behavior and not an absolute standard. Some of the respondents did not report direct involvement with patients, and their lack of confidence in abilities may reflect their job role, more than it does a fundamental educational need in these communities. Though information was collected regarding the practice environment for each respondent, the lack of objective corroborating information regarding alcohol use prevalence and HIV prevalence in the respondents' practice environments limits the study's ability to draw firm conclusions with regard to the appropriateness of the priority respondents attribute to improving their

knowledge with regard to these areas. Though the instrument used was not validated in its final form, the questions were derived from a validated instrument. The observed correlations between scale scores suggest that the assembled questions have both face and concurrent validity, and internal consistency of scales was high.

CONCLUSIONS

Alcohol use is an important cause of morbidity and mortality among persons with HIV. Improved coordination and integration of HIV and alcohol services has the potential to improve outcomes for persons living with HIV. Though providers agreed in principle to learning more about the interplay between the two areas, training gaps were identified. Educational programs are needed that enhance provider understanding of the impact of alcohol on persons living with HIV and strategies that can be used to change behavior within the context of busy clinical practices. HIV care and alcohol treatment programs need to identify and develop programs so that service providers can reinforce key messages to improve patient outcomes.

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Table 1

Respondent Demographics

Characteristic		HIV Providers	Addiction Treatment Providers
Participants	Surveys sent	5,007	2,194
	Respondents	159	119
Race	Caucasian/White	82%	84%
	African American	9%	9%
	Asian	2%	2%
	American Indian/Alaska Native	<1%	2%
	Other multiracial	--	--
Ethnicity	Hispanic	11%	10%
	Non Hispanic	89%	90%
Gender	Male	28%	28%
	Female	72%	71%
	Transgender	--	1%
Work Experience	Years experience: mean (SD)	14 (8)	17(10)
Employment Site	Community Based Organization	16%	14%
	Community Health Center	14%	3%
	Hospital Based Clinic	12%	18%
	Academic Health Center	10%	1%
	HIV Clinic	10%	1%
	State Health Department	6%	3%
	College University	5%	6%
	Correctional Facility	5%	6%
	Private Practice	3%	--
	Infectious Disease Clinic	3%	--
	Hospital/ER	3%	2%
	Mental/Behavioral Health Clinic	3%	13%
	Other primary care clinic	3%	2%
	Substance Abuse Treatment Center	2%	26%
	Non-Health	--	3%
	Military/VA	--	3%
	HMO/Managed Care Organization	--	2%

Table 2

Survey instrument

	HIV Providers (n=159)		% Agree or Greater	Item Mean (SD)	Scale Mean (SD)	Cronbach's α
Domain: <i>Existing Knowledge</i>						
Scale		I routinely assess alcohol and other drug use as part of routine care visits with HIV-infected patients (n=152)	87	4.2	3.87 (0.56)	0.81
			85	4.1		
			80	4.0		
			62	3.5		
			54	3.5		
			85	4.2		
			72	3.8		
			83	4.1		
			41	3.1		
			93	4.3		
Domain: <i>Desire for New Knowledge/Resources</i>						
Scales	Relative Advantage	Gaining additional knowledge about unhealthy drinking would improve my ability to provide effective clinical care (n=154)	81	4.1	3.85 (0.63)	0.67
		Resources on unhealthy drinking would be helpful to my clinical practice (n=153)	88	4.2		
		Training in unhealthy drinking is a priority compared to other continuing education topics (n=153)	39	3.3		
	Compatibility	Unhealthy drinking is a relevant issue for the clients that I work with (n=151)	84	4.1	4.04 (0.50)	0.64
		Resources on unhealthy drinking would be helpful to my clients (n=152)	90	4.3		
		Unhealthy drinking is an important consideration in working with clients (n=153)	95	4.4		
		My clients would be receptive to receiving resources on unhealthy drinking (n=151)	43	3.4		
	Complexity*	It would be relatively easy to incorporate resources on unhealthy drinking into my clinical practice (n=153)	73	3.9	2.17 (0.70)	0.81
		It would be possible for me to dedicate time to learn more about unhealthy drinking (n=150)	71	3.8		
		It would be relatively easy for me to implement new practices regarding unhealthy drinking from workshops/trainings into my practice (n=150)	67	3.8		
Domain: <i>Individual/Organization Capacity for Change</i>						
Scales	Individual Needs:	Effectively assess client problems and needs related to unhealthy drinking (n=154)	57	3.4	3.70 (0.67)	0.85

	HIV Providers (n=159)		% Agree or Greater	Item Mean (SD)	Scale Mean (SD)	Cronbach α
	<i>I need more training to</i>	Help clients increase motivation for participation in treatment for unhealthy drinking (n=154)	79	3.9		
		Assess and monitor client progress specific to unhealthy drinking (n=154)	64	3.6		
		Improve knowledge and clinical skills specific to clients with unhealthy drinking (n=153)	76	3.8		
		Improve my awareness and utilization of community based services available to clients with unhealthy drinking (n=152)	71	3.8		
	Program Needs: <i>My program needs additional resources to</i>	Assess client problems and needs regarding unhealthy drinking (n=153)	54	3.5		
		Match client needs with targeted services for unhealthy drinking (n=153)	69	3.8		
		Increase program participation by clients with unhealthy drinking (n=154)	74	3.9	3.75 (0.63)	0.83
		Measure client performance/outcomes specific to unhealthy drinking (n=154)	71	3.7		
		Raise the overall quality of counseling and referral services for unhealthy drinking (n=153)	78	3.9		
	Alcohol Service Providers (n=119)					
Domain: Existing Knowledge						
		I understand how HIV is transmitted	99	4.7		
		I know how HIV is typically treated	83	4.1		
		I am knowledgeable about the side effects of medications used to treat HIV	50	3.3		
		I understand why some people develop AIDS and some people do not (n=117)	55	3.4		
		I am aware of who is getting infected with HIV locally (n=117)	65	3.5		
		I am aware of who is getting infected with HIV globally (n=118)	66	3.6	3.82 (0.61)	0.87
		I consider myself competent to counsel clients about safer sex (n=118)	82	4.1		
		I am knowledgeable about other sexually transmitted infections that enhance HIV transmission and acquisition (n=118)	74	3.8		
		I am knowledgeable about the lifestyles of men who have sex with men, and other sexual and gender minorities (n=115)	71	3.7		
		I understand the ways in which drinking can affect HIV status and transmission (n=117)	83	4.1		
Domain: Desire for New Knowledge						
	Relative advantage	Gaining additional knowledge about HIV would improve my ability to provide effective clinical care (n=117)	77	3.9		
Scal		Resources on HIV would be helpful to my clinical practice (n=117)	80	4.0	3.74 (0.64)	0.60
		Training in HIV is a priority compared to other continuing education topics (n=116)	40	3.3		
	Compatibility	HIV is a relevant issue for the clients that I work with (n=117)	68	3.9	3.97 (0.59)	0.76

	HIV Providers (n=159)		% Agree or Greater	Item Mean (SD)	Scale Mean (SD)	Cronbach's α
Scales	Complexity*	Resources on HIV would be helpful to my clients (n=117)	85	4.1		
		HIV is an important consideration in working with clients (n=116)	86	4.2		
		My clients would be receptive to receiving resources on HIV (n=116)	58	3.7		
		It would be relatively easy to incorporate resources on HIV into my clinical practice (n=117)	80	4.0		
		It would be possible for me to dedicate time to learn more about HIV (n=117)	71	3.8	2.12 (0.60)	0.76
		It would be relatively easy for me to implement new practices regarding HIV from workshops/trainings into my practice (n=116)	72	3.9		
	Domain: Individual/Organizational Capacity for Change					
	Program Needs: My program needs additional resources to	Effectively assess client problems and needs related to HIV (n=116)	57	3.5		
		Help clients increase motivation for participation in treatment for HIV (n=116)	53	3.4		
		Assess and monitor client progress specific to HIV (n=113)	61	3.5	3.58 (0.70)	0.82
		Improve knowledge and clinical skills specific to clients with HIV (n=116)	71	3.7		
		Improve my awareness and utilization of community based services available to clients with HIV (n=116)	66	3.7		
		Assess client problems and needs regarding HIV (n=117)	59	3.5		
		Match client needs with targeted services for HIV (n=117)	63	3.5		
		Increase program participation by clients with HIV (n=117)	61	3.6	3.61 (0.74)	0.89
		Measure client performance/outcomes specific to HIV (n=115)	62	3.6		
		Raise the overall quality of counseling and referral services for HIV (n=117)	74	3.8		

Note: Items scored on Likert scale (1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree). Cronbach's α presented for all scale scores. Scores were excluded for all items when greater than or equal to 20% of the questions were omitted.

* Items reversed scored for generation of scale scores 1=Strongly Agree 2= Agree 3=Neutral 4= Disagree 5=Strongly Disagree

Table 3

Correlations among the Subscale Scores

	Existing Knowledge	Relative Advantage	Compatibility	Complexity	Individual Needs	Program Needs
Existing Knowledge	1.00					
Relative Advantage	0.041	1.00				
Compatibility	0.365 ***	0.365 ***	1.00			
Complexity	-0.367 ***	-0.363 ***	-0.543 ***	1.00		
Individual Needs	-0.309 ***	0.506 ***	0.111 *	-0.125 *	1.00	
Program Needs	-0.102 *	0.448 ***	0.258 ***	-0.202 ***	-0.668 ***	1.00

Note.

* one-tailed p < .05;

** one-tailed p < .01;

*** one-tailed p < .001

Table 4

Correlations between Provider Characteristics and Subscale Scores

	Existing Knowledge	Relative Advantage	Compatibility	Complexity	Individual Needs	Program Needs
HIV Providers (N=132)						
# years providing service	.247**	-.104	.099	.067	-.187*	-.081
% of clients with unhealthy drinking	.241**	-.015	.326***	-.120	-.187*	-.051
Alcohol Providers (N=89)						
# years providing service	.262**	-.158	.081	.026	-.136	-.027
% of clients with HIV	.307**	.066	.424***	-.119	-.071	.042

Note.

* one-tailed p < .05;

** one-tailed p < .01;

*** one-tailed p < .001;