

HIV Care Providers' Implementation of Routine Alcohol Reduction Support for Their Patients

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Abstract

Screening and brief intervention (SBI) for alcohol reduction is an important health promoting strategy for patients with HIV, and HIV care providers are optimally situated to support their patients' reduction efforts. We report results from analyses that use data collected from providers ($n = 115$) in 7 hospital-based HIV care centers in the New York City metropolitan area in 2007 concerning their routine use of 11 alcohol SBI components with their patients. Providers routinely implemented 5 or more of these alcohol SBI components if they (1) had a specific caseload (and were therefore responsible for a smaller number of patients), (2) had greater exposure to information about alcohol's effect on HIV, (3) had been in their present positions for at least 1 year, and (4) had greater self efficacy to support patients' alcohol reduction efforts. Findings suggest the importance of educating all HIV care providers about both the negative impact of excessive alcohol use on patients with HIV and the importance and value of alcohol SBIs. Findings also suggest the value of promoting increased self efficacy for at least some providers in implementing alcohol SBI components, especially through targeted alcohol SBI training.

Introduction

ALTHOUGH BOTH the morbidity and mortality of patients with HIV have decreased considerably in the past decade with the introduction of antiretroviral (ARV) therapy, many individuals with HIV continue to seriously jeopardize their health by using and abusing alcohol.¹ These individuals experience more rapid disease progression and HIV-related complications as a result of alcohol use.²⁻⁴ HIV-infected people who use alcohol excessively may also engage in risky sexual behaviors while under its influence, exposing both themselves and their partners to sexually transmitted infections.⁵⁻⁷ In addition, studies have shown that the use of various substances can have an effect on HIV medication adherence.⁸⁻¹⁰ While not all studies examining the relationship between alcohol use and medication adherence have found a negative association between the two,¹¹ some studies have determined that people consuming alcohol while undergoing ARV treatment prescribed are considerably less likely to be adherent to the medication.¹²⁻¹⁴ Of especially great concern is the high prevalence of coinfection of HIV and hepatitis C virus (HCV), with the consequence that end-stage liver disease, accelerated as a result of alcohol use among those coinfecting, has become a leading cause of illness and

death among these individuals.^{15,16} Furthermore, HCV treatment is less effective in people with HIV/HCV coinfection, and its effectiveness is limited even more by ongoing alcohol use.¹⁷

Importantly, HIV care providers have great potential to serve as patients' advocates and counselors regarding alcohol reduction, both to prevent the development of serious health consequences, and to limit transmission of the virus to others.^{18,19} In fact, some providers view alcohol reduction counseling as consistent with patients' health promotion.²⁰ However, other providers and their patients have come to expect that the provider will facilitate access to services and respond to the patient's expressed needs, rather than focus on the patient's alcohol use practices.²¹ Some providers may therefore resist implementing alcohol reduction counseling. This may especially be the case if they feel that it will shift priorities away from providing more traditional care and support, and if it threatens to harm their good relationships with patients.^{20,22} Even if they are comfortable in their roles as alcohol reduction supporters, experienced HIV care providers may still have difficulty assisting in their patients' alcohol reduction efforts. They may have (1) limited exposure to comprehensive and current information regarding the identification of at-risk drinkers and the negative impact of alcohol

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use on HIV patients, (2) limited time to conduct patient risk reduction counseling (often due to their responsibility for a large numbers of patients), (3) limited self efficacy to implement alcohol reduction support, and (4) limited training to facilitate addressing patients' alcohol abuse issues.^{2,19,22-24} Less experienced providers (who constitute a substantial proportion of the HIV care workforce as a result of high provider turnover rates^{25,26}) may find it especially challenging to incorporate addiction counseling into their interactions with patients if they lack the skills, confidence, experience, and organizational support to do so.^{21,27,28} Regardless of their experience with HIV patients, providers' personal alcohol use may be an additional unspoken barrier. The importance of alcohol reduction among HIV patients, however, argues for the need for its support by HIV care providers.

To support alcohol reduction among a variety of populations, alcohol screening and brief intervention (SBI) has been shown to be an effective approach.^{29,30} Alcohol screening involves assessing patients for alcohol use, frequency, abuse, and dependence, and for problems caused by this use.^{31,32} The brief intervention involves the implementation of a variety of components (e.g., assessing patients about their readiness to cut down their use, providing patients with suggestions about alcohol reduction, creating actual plans with patients about reducing their drinking). It typically incorporates patient-centered, motivational, and interactive counseling techniques that increase patients' readiness to change harmful behaviors.³³ Regrettably, although they are effective, SBIs are frequently underutilized and often not incorporated by health providers as a standard component of regular counseling activities and strategies.^{34,35} Given the serious consequences of alcohol use for patients with HIV, it would be especially unfortunate if this were the case among HIV care providers.

At present, little is known about the extent to which HIV care providers, including physicians, physicians' assistants, nurses, nurse practitioners, case managers, social workers, and others, routinely offer alcohol reduction support to their patients in the form of SBI components. This paper therefore describes the alcohol reduction support offered by HIV care providers ($n = 115$) in hospital-based HIV/AIDS centers in the New York City metropolitan area. In addition, it presents the results of a logistic regression analysis that examines the salient correlates that differentiate providers who routinely offer more than the median number of alcohol SBI components in this HIV care provider sample and those who do not.

Methods

Study participants included HIV care providers who delivered direct patient care in 7 designated AIDS centers (DACs) in the New York City metropolitan area in 2007. DACs are comprehensive, hospital-based, state-licensed HIV treatment centers providing both inpatient and outpatient care. They utilize interdisciplinary teams and provide case management services, emphasizing quality improvement in order to provide a high level of clinical and support services. Reflecting differences in the sizes of their patient populations and in the corresponding sizes of their direct care staff, the number of participating staff in each DAC varied from 6 to 21, totaling 115 participants. An average of 7.3 staff and a median of 8 staff participated in each DAC, with only 1 DAC accounting for fewer than 12 staff participants.

The data used in the current research were collected from these 115 HIV care providers as part of a larger study funded by the National Institute on Alcohol Abuse and Alcoholism (NIAAA). This larger study is intended to evaluate a state-of-the-art training on supporting alcohol reduction in HIV patients. The 3-hour training is an adaptation for HIV care providers of NIAAA's alcohol screening and brief intervention protocol (as described in NIAAA's Clinician's Guide).³⁶ Analyses in the current research use data collected from providers at each of the DACs before the training took place.

After receiving assurances regarding the voluntary nature of the research and the confidentiality of responses, providers who consented to participate in each of the 7 DACs completed a 20-minute self-administered survey. The survey items had been pretested with a group of 20 community-based HIV care providers. Five of these community-based providers participated in cognitive interviews to ensure that the wording of the items was clear, and that the items measured what they were intended to measure. Following the pretesting phase, project investigators and consultants modified some items and eliminated those that were redundant.

Dependent variable: routine provision of a high level of alcohol reduction support to patients with HIV

Eleven of the survey items assessed the extent to which components of alcohol SBIs were routinely practiced by providers in the past month. The items were created using information gathered in informal discussions with community-based HIV care providers and DAC administrators, and using past literature regarding the implementation of SBI components.³⁷⁻⁴² The 11 items contained within the survey reflect many of the alcohol SBI components described in NIAAA's Clinician's Guide.³⁶ We first asked respondents to indicate whether they asked none, a few, some, most, or all of their HIV patients about their alcohol use. We then asked respondents whether they implemented 10 specific components of brief alcohol interventions with none, a few, some, most, or all of their HIV patients who drank alcohol. For the purposes of this research, responses to each of the 11 items were dichotomized. They differentiate "routine" implementation of the alcohol screening or alcohol reduction component (i.e., implementation in the past month with most or all patients), from "nonroutine" implementation (i.e., implementation in the past month with none, a few, or some of these patients). For each participating provider, the number of components routinely provided was then tallied. The median of these tallied components among the 115 HIV care providers was computed. The dependent variable for the research was then created by dichotomizing the group of providers into those who routinely implemented no more than the median number of these components in the past month and those who implemented more than the median number.

Independent variables

In addition to their demographic characteristics (e.g., gender, race, ethnicity), providers indicated whether or not they were medically credentialed (i.e., were physicians, physicians' assistants, nurses, or nurse practitioners). We asked about providers' experience with patients with HIV, including the length of time they had worked with these patients, how long they were employed in their current positions, and whether

they worked full-time or part-time. As those who did not have specific caseloads worked with an especially large number of patients, we asked whether providers had specific caseloads. To understand providers' past exposure to relevant training and information regarding alcohol reduction support, respondents also indicated whether they had participated in workshops on motivational interviewing and/or brief interventions within the past year. They were also asked whether or not they had ever participated in a workshop that specifically covered brief interventions for alcohol reduction. In addition, they indicated the way(s) in which they had learned about alcohol's impact on HIV (i.e., workshops/trainings; books/pamphlets; videos; internet; medical people; another way). The number of different ways was then tallied for each provider as an indicator of the extent of their exposure to the relationship between alcohol and HIV infection.

Respondents also completed an eight item Brief Intervention Knowledge Assessment and an 8-item Alcohol Reduction Support Self-Efficacy Scale. In consultation with experts in the field, items were created for the Knowledge Assessment and Self-Efficacy Scale that adapted those that were in the literature.^{38,43-47} We obtained a total score for each respondent on the Brief Intervention Knowledge Assessment by determining the number of items that were correctly endorsed. In the case of each of the items in the Alcohol Reduction Support Self-Efficacy Scale, respondents gave numerical ratings (from 0 to 10) regarding the degree to which they felt confident in their ability to provide the specific type of support assessed. A total score on the Alcohol Reduction Support Self-Efficacy Scale was obtained for each respondent by summing the scores on each of the individual items.

Statistical analysis

Using SPSS 15.0 (SPSS Inc., Chicago, IL), we first examined the range of responses on the Brief Intervention Knowledge Assessment and the reliability, factor structure, range, and variability of the Alcohol Reduction Support Self-Efficacy Scale. We then performed a series of bivariate logistic regression analyses. These analyses determined which of the Assessment and Scale scores and which of the other independent variables should be considered for inclusion in a multiple logistic regression model. This model was intended to explain variation in a provider's routinely high level of implementation of the alcohol SBI components (i.e., more than the median number of components). Variables that were significant at the 0.20 level or less in the bivariate analyses were included in the initial multiple logistic regression model.

To determine the final, most parsimonious multiple logistic regression model, variables were eliminated from the initial model, one at a time. A variable was dropped from the model if it did not significantly contribute to explaining variation in the dependent variable, if the coefficients of the remaining variables changed only minimally, and if the difference in the log-likelihoods of the models with and without the variable was not significant. After the elimination of a variable, the model was reexamined to determine if other variables should be eliminated.

Because participants were drawn from 7 DACs, we also investigated the possibility of site differences. To do so, we used STATA to fit a generalized estimating equation (GEE) model with logit link and binomial distribution using the same model structure as our final multiple logistic regression

model, and with the addition of a working correlation matrix to capture within program correlations.

Results

Sample characteristics

The majority (80%) of the participating providers were female. Approximately half (56.7%) were white, approximately one third (32.0%) were black, and the remainder were of other and mixed races. One in five of the participants (20.9%) were Hispanic/Latino. Close to half (42.6%) reported that they had medical degrees (including physicians, physicians' assistants, nurses, and nurse practitioners). The vast majority (91.1%) worked full time at their DACs, with most (86.6%) in their current positions for 1 year or more. A great majority (83.8%) had at least 3 years experience working with patients with HIV. Approximately three quarters (73.0%) of the providers had a specific caseload.

Exposure to information and training regarding alcohol reduction support varied among the participating providers. Two in five (40.0%) had attended a workshop in the past year on brief interventions, and the same proportion had attended a training on motivational interviewing during this time period. Approximately one third (37.2%) indicated that they had attended a workshop specifically on brief interventions on alcohol reduction some time in the past. On average, providers indicated that they had learned about the effects of alcohol use on patients with HIV in 2.6 of the following different ways: workshops/trainings; books/pamphlets; videos; Internet; medical people; another way.

Brief Intervention Knowledge Assessment

For each of the eight items on the Brief Intervention Knowledge Assessment (Table 1), respondents indicated if the item was true or false or if they did not know. A total score on the Assessment was obtained for each respondent by determining the number of items that was correctly endorsed. Each individual's score could therefore range between 0 and 8. Participants scored 5.7 of 8, on average.

The vast majority of providers knew that screening for current alcohol use and its consequences is an essential component of a brief alcohol intervention, and that brief interventions generally need to be specifically tailored to patients' readiness to change harmful behaviors. More than half of the respondents, however, incorrectly believed that brief interventions rarely promote significant, lasting reductions in drinking levels in at-risk drinkers.

Alcohol Reduction Support Self-Efficacy Scale

Each of the eight items on the Alcohol Reduction Support Self-Efficacy Scale (Table 2) asked respondents to rate their confidence with regard to supporting their patients with HIV in reducing their alcohol use. The 11-point rating ranged from 0 = not confident to 10 = very confident. Item scores were summed to obtain a total score with a possible range from 0 to 80, with higher scores exhibiting a greater sense of overall self efficacy. The scale exhibited excellent reliability ($\alpha = 0.92$). A principal components factor analysis identified one factor, with an eigenvalue of 5.3, accounting for 65.8% of the variance. Total scores on the scale ranged from 0 to 80, with a

TABLE 1. TRUE-FALSE BRIEF INTERVENTION KNOWLEDGE ASSESSMENT^a (N = 115)

Statement	Percent answering correctly
Screening for current alcohol use and its consequences is an essential component of a brief alcohol intervention. (true)	87.0
Brief interventions generally need to be specifically tailored to patients' readiness to change their harmful behaviors. (true)	86.1
Although brief interventions have been implemented by a variety of professionals, they are most effective when conducted by physicians. (false)	78.3
Brief interventions generally involve a few short sessions with a patient. (true)	76.5
Brief interventions emphasize the patient's responsibility for changing behavior. (true)	75.7
Brief interventions for alcohol use are inappropriate for patients who also use other drugs. (false)	66.1
Brief interventions generally work best when the provider, rather than the patient, presents a plan and sets goals for the patient to follow. (false)	59.1
Although helpful temporarily, brief interventions rarely promote significant, lasting reductions in drinking levels in at-risk drinkers. (false)	40.9

^aTotal score: median, 6.0; mean (standard deviation), 5.7 (1.7).

median of 58, and a mean and standard deviation of 56.1 and 15.2, respectively.

Providers' ratings indicated that they were most confident in their ability to bring up the subject of alcohol use with their patients with HIV, to help them understand the health risks related to their drinking, and to screen these patients for alcohol use. They gave their lowest rating to their confidence about knowing the appropriate questions to ask HIV patients when providing alcohol reduction counseling.

Routine provision of alcohol reduction support to patients with HIV in the past month

As can be seen in Table 3, three quarters (77.4%) of the participating providers routinely asked patients with HIV about alcohol use. Approximately half of the providers also routinely educated patients with HIV who drink regarding the risks of alcohol use, advised most of these patients about sensible drinking, and encouraged them to talk about alcohol reduction. However, only about one third of the providers routinely acknowledged patients' challenges about changing drinking patterns, assessed their readiness to cut down on alcohol use, asked about their alcohol reduction progress in subsequent meetings, provided suggestions to them about reducing their drinking, or encouraged or arranged follow-up

alcohol reduction support for them. In addition, only approximately 1 in 10 of the providers routinely created an alcohol reduction plan with their patients with HIV who drink, or provided them with alcohol reduction literature.

Of the 11 components of SBI for alcohol reduction that we asked about, providers indicated that they routinely provided 4.4 of these components, on average, with a median of 4 components. A total of 61 participants indicated that they routinely provided 4 or fewer of these components, and the remaining 54 participants indicated that they provided 5 or more of them on a routine basis.

We conducted a multiple logistic regression analysis to determine the variables that predict having routinely provided more than the median number of alcohol SBI components ($n = 4$) with patients with HIV in the past month. We considered a number of variables including: (1) demographics (gender, race, ethnicity); (2) professional characteristics (medical training, having worked with HIV patients for at least 3 years, having been in their present positions for at least 1 year, full-time work, having a specific caseload); (3) past exposure to brief intervention techniques and/or alcohol's impact on patients with HIV (the number of different ways the provider learned about HIV and alcohol, attendance at a workshop on motivational interviewing in the past year, past year attendance at a workshop on brief interventions, having

TABLE 2. ALCOHOL REDUCTION SUPPORT SELF-EFFICACY SCALE^a (N = 115)

<i>I am confident that ...</i>	<i>Rating from 0 to 10: 0 = not confident at all 10 = completely confident</i>
... I can bring up the subject of alcohol use with my HIV-positive patients.	8.7
... I can help my patients understand the health risks related to their drinking.	8.0
... I can screen my HIV-positive patients for alcohol use.	7.8
... I can assess my HIV-positive patients' readiness to reduce their alcohol use.	6.7
... I can state my conclusions and recommendations regarding alcohol reduction clearly to my HIV-positive patients.	6.4
... I can counsel patients who are not currently interested in reducing their drinking.	6.3
... I can help my HIV-positive patients set goals regarding their alcohol reduction.	6.2
... I know the appropriate questions to ask HIV-positive patients when providing alcohol reduction counseling.	5.8

^aTotal score: median, 58.0; mean (standard deviation), 56.1 (15.2).

TABLE 3. PROVIDED ALCOHOL REDUCTION SUPPORT TO MOST/ALL PATIENTS IN THE PAST MONTH^a (N=115)

<i>Support component</i>	<i>Proportion routinely providing</i>
Asked most/all HIV-positive patients about alcohol use	77.4
Educated most/all HIV-positive patients who drink regarding the risks of alcohol use	54.8
Advised most/all HIV-positive patients who drink about sensible drinking	50.4
Encouraged most/all HIV-positive patients who drink to talk about reducing their alcohol use	50.0
Acknowledged challenges about changing drinking patterns (like dealing with triggers to drink again) with most/all HIV-positive patients who drink	38.6
Assessed most/all HIV-positive patients who drink on their readiness to cut down on their alcohol use	38.3
Asked most/all HIV-positive patients who drink about their alcohol reduction progress in subsequent meetings	36.6
Provided suggestions about reducing their alcohol use to most/all HIV-positive patients who drink	36.5
Encouraged or arranged follow-up support, such as attendance at 12 step groups or assistance from a friend or family member, with most/all HIV-positive patients who drink	28.1
Created an actual alcohol reduction plan with most/all HIV-positive patients who drink	11.5
Provided most/all HIV-positive patients who drink with alcohol reduction literature	11.4

^aTotal score: median, 4.0; mean (standard deviation), 4.4 (3.3).

ever attended a workshop specifically on brief interventions for alcohol reduction); (4) the score on the Brief Intervention Knowledge Assessment; and (5) the score on the Alcohol Reduction Support Self-Efficacy Scale. In bivariate logistic regression analyses, with each variable entered separately in the model, it was determined that providers were significantly ($p < 0.05$) more likely to have routinely provided more than the median number of alcohol SBI components with patients with HIV in the past month if they: (1) had a specific caseload, (2) had a larger number of different ways in which they had learned about HIV and alcohol, (3) had a higher score on the Brief Intervention Knowledge Assessment, and (4) had a higher score on the Alcohol Reduction Support Self-Efficacy Scale. Providers who (1) had worked with HIV patients for at least 3 years, (2) were in their current positions for at least 1 year, and (3) had attended a workshop on motivational interviewing in the past year, tended ($p < 0.20$) to provide this higher level of service provision.

All of the individual variables found to be significant at the 0.20 level or less when considered separately as predictors of having routinely provided 5 or more alcohol SBI components with HIV patients in the past month were entered into a multiple logistic regression model. We eliminated three variables from the final model: worked with HIV patients for at least 3 years, attended a workshop on motivational interviewing in the past year, and score on the Brief Intervention Knowledge Assessment. None contributed significantly in the final model to explaining variation in the dependent variable, the coefficients of the remaining variables in the model

changed only minimally, and the change in $-2 \log$ -likelihood (5.986 with 3 degrees of freedom) between the initial model and the model with the 3 variables removed was not significant ($p > 0.1$). In addition, because the GEE model (created to examine the possibility of site bias) produced results almost identical to the simple logistic regression model, we present this latter model in Table 4 for simplicity. The final model indicates that providers were significantly more likely to routinely implement more than the median number of alcohol SBI components with HIV patients in the past month if they (1) had a specific caseload, (2) had a larger number of different ways in which they learned about HIV and alcohol, (3) were in their current positions for at least 1 year, and (4) had a higher score on the Alcohol Reduction Support Self-Efficacy Scale.

Discussion

In view of the importance of supporting alcohol reduction among patients with HIV, it is of considerable concern that the median number of routinely implemented components of alcohol SBIs among DAC providers was 4 of the 11 that we asked about. Certainly, it is gratifying that three quarters of the providers routinely asked their HIV-infected patients about alcohol use, and had a high level of confidence in their ability to bring up the subject of alcohol use and screen patients for this use. Only a minority of providers, however, followed through with their patients who drink in supporting alcohol reduction efforts. In particular, only one third of the providers routinely asked about their patients' alcohol

TABLE 4. ROUTINELY PROVIDED FOUR OR MORE COMPONENTS OF SCREENING AND BRIEF ALCOHOL REDUCTION INTERVENTION WITH HIV-POSITIVE PATIENTS IN THE PAST MONTH: MULTIVARIATE LOGISTIC REGRESSION MODEL (N = 112)^a

	<i>Regression coefficient</i>	<i>Standard error</i>	<i>Probability</i>
Self-efficacy scale score	.057	.018	.002
Number of ways learned about how alcohol use affects HIV	0.350	0.158	0.027
Has a specific caseload	1.201	0.559	0.032
In present position at least 1 year	1.506	0.711	0.034
Constant	-6.486	1.479	0.000

^aThree providers had incomplete data on one or more of the independent variables.

reduction progress or routinely provided them with suggestions about cutting down on their drinking, and only 1 in 10 routinely created an alcohol reduction plan with their patients who drink. Without such alcohol reduction support, many of these patients may continue to endanger their health by persisting in their drinking. Because, as our data indicate, many providers are unaware that brief interventions can promote significant and lasting reductions in drinking levels in at-risk drinkers, providers may not be aware of the value and importance of these alcohol reduction support efforts.

Providers who routinely implemented more than the median number of components of alcohol reduction support were more likely to have had greater exposure to information about HIV and alcohol. Greater exposure to relevant health information has also been shown to influence behavior in other patient care contexts (e.g., more frequent prescribing of naltrexone in drug treatment programs⁴⁸). This suggests the importance of educating HIV care providers about the negative effects of drinking among patients with HIV, education that may lead to an understanding of the value and importance of alcohol SBIs.

We also found that providers implemented a greater number of alcohol reduction components if they had been in their current positions for at least 1 year. These providers likely felt more integrated into their organizations than those who had only been there for a very short time, perhaps generating more comfort in their roles as patients' alcohol reduction supporters. Providers also implemented more alcohol reduction components if they had more self efficacy in their ability to support patients' alcohol reduction efforts. Consistent with the current findings, self efficacy has been shown to be an important predictor of performance in a great variety of occupational fields,⁴⁹ including HIV/AIDS.⁵⁰ Fortunately, training in SBI can increase some providers' confidence in performing alcohol screening procedures, and in conducting brief alcohol reduction interventions.³⁷

Our analyses also indicate that those providers without specific caseloads routinely implemented fewer alcohol reduction components. Providers with no specific caseloads (including many of the participating DAC primary care physicians and nurses) generally serve very large numbers of patients. Especially for these providers, patient volume limits the amount of time that can be spent with each patient. This, together with the complexity of many patients' issues and the attention that these issues require, present substantial barriers to finding the time to implement alcohol reduction support during patients' visits.⁵¹⁻⁵³ Thus, from a practical standpoint, these providers may need to use a "specialist" approach,¹⁹ referring patients to other professionals in their programs who have more time and expertise to effectively counsel patients regarding their alcohol reduction needs.⁵⁴

Several limitations of the research need to be acknowledged. First, as is true with all self report questionnaires, social desirability may have biased some of the responses to our questions. This is likely to be mitigated, at least in part, by the fact that respondents did not identify themselves by name. In addition, although the data were gathered in 7 DACs in the New York City metropolitan area, it is unclear to what extent these results are generalizable to staff in other HIV programs in New York City and elsewhere. Finally, routine implementation of a higher level of alcohol reduction support was measured relative to the 11 SBI components that we

asked about. Providers may have implemented other types of alcohol reduction support that were not assessed in our research.

Conclusion

In spite of its limitations, this research suggests the importance of supporting HIV providers in their alcohol reduction efforts with patients. They especially need to be exposed to information about the dangers of alcohol use among these patients, and the effectiveness of alcohol SBIs. Furthermore, training in the use of SBIs for HIV care providers who view alcohol reduction support as consistent with their roles should increase their self efficacy in implementing them with their patients. This, in turn, should result in more frequent use of SBI components. Even for those providers with especially large caseloads who may find that implementing SBIs is impractical for them personally, increasing their awareness of SBIs' effectiveness may encourage them to refer patients to other clinicians in the HIV care practice. In this way, HIV patients who drink can be supported in reducing their alcohol use in order to preserve their health and limit the spread of the virus to others.

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Author Disclosure Statement

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References

1. Bryant KJ. Expanding research on the role of alcohol consumption and related risks in the prevention and treatment of HIV/AIDS. *Subst Use Misuse* 2006;41:1465-1507.
2. Conigliaro J, Madenwald T, Bryant K, et al. The Veterans Aging Cohort Study: Observational studies of alcohol use, abuse, and outcomes among human immunodeficiency virus-infected veterans. *Alcohol Clin Exp Res* 2004;28:313-321.
3. Cook RT. Alcohol abuse, alcoholism, and damage to the immune system: A review. *Alcohol Clin Exp Res* 1998; 22:1927-1942.
4. Meyerhoff DJ. Effects of alcohol and HIV infection on the central nervous system. *Alcohol Res Health* 2001;25:288-298.
5. Palepu A, Raj A, Horton NJ, Tibbetts N, Meli S, Samet JH. Substance abuse treatment and risk behaviors among HIV-infected persons with alcohol problems. *J Subst Abuse Treat* 2005;28:3-9.
6. Parsons JT, Vicioso K, Kutnick A, Punzalan JC, Halkitis PN, Velasquez MM. Alcohol use and stigmatized sexual practices of HIV seropositive gay and bisexual men. *Addict Behav* 2004;29:1045-1051.
7. Stein M, Herman DS, Trisvan E, Pirraglia P, Engler P, Anderson BJ. Alcohol use and sexual risk behavior among human immunodeficiency virus-positive persons. *Alcohol Clin Exp Res* 2005;29:837-843.
8. Arnsten JH, Demas PA, Grant RW, et al. Impact of active drug use on antiretroviral therapy adherence and viral sup-

- pression in HIV-infected drug users. *J Gen Intern Med* 2002;17:377-381.
9. Tucker JS, Burnam MA, Sherbourne CD, Kung FY, Gifford AL. Substance use and mental health correlates of non-adherence to antiretroviral medications in a sample of patients with human immunodeficiency virus infection. *Am J Med* 2003;114:573-580.
 10. Berg KM, Demas PA, Howard AA, Schoenbaum EE, Gourevitch MN, Arnsten JH. Gender differences in factors associated with adherence to antiretroviral therapy. *J Gen Intern Med* 2004;19:1111-1117.
 11. Parruti G, Manzoli L, Toro PM, et al. Long-term adherence to first-line highly active antiretroviral therapy in a hospital-based cohort: Predictors and impact on virologic response and relapse. *AIDS Patient Care STDs* 2006;20:48-56.
 12. Braithwaite RS, McGinnis KA, Conigliaro J, et al. A temporal and dose-response association between alcohol consumption and medication adherence among veterans in care. *Alcohol Clin Exp Res* 2005;29:1190-1197.
 13. Heckman BD, Catz SL, Heckman TG, Miller JG, Kalichman SC. Adherence to antiretroviral therapy in rural persons living with HIV disease in the United States. *AIDS Care* 2004;16:219-230.
 14. Samet JH, Horton NJ, Meli S, Freedberg KA, Palepu A. Alcohol consumption and antiretroviral adherence among HIV-infected persons with alcohol problems. *Alcohol Clin Exp Res* 2004;28:572-577.
 15. Benhamou Y, Bochet M, DiMartino V, et al. Liver fibrosis progression in human immunodeficiency virus and hepatitis C virus coinfecting patients. *Hepatology* 1999;30:1054-1058.
 16. Prakash O, Mason A, Luftig RB, Bautista AP. Hepatitis C virus (HCV) and human immunodeficiency virus type 1 (HIV-1) infections in alcoholics. *Front Biosci* 2002;7:e286-300.
 17. Pol S, Lamorthe B, Thi NT, et al. Retrospective analysis of the impact of HIV infection and alcohol use on chronic hepatitis C in a large cohort of drug users. *J Hepatol* 1998;28:945-950.
 18. Centers for Disease Control and Prevention (CDC); Health Resources and Services Administration; National Institutes of Health; HIV Medicine Association of the Infectious Diseases Society of America. Incorporating HIV prevention into the medical care of persons living with HIV. Recommendations of CDC, the Health Resources and Services Administration, the National Institutes of Health, and the HIV Medicine Association of the Infectious Diseases Society of America. *MMWR Recomm Rep* 2003;52:1-24.
 19. Morin SF, Koester KA, Steward WT, et al. Missed opportunities: Prevention with HIV-infected patients in clinical care settings. *J Acquire Immune Defic Syndr* 2005;36:960-966.
 20. Gerbert B, Danley DW, Herzig K, et al. Reframing "prevention with positives": incorporating counseling techniques that improve the health of HIV-positive patients. *AIDS Patient Care STDs* 2006;20:19-29.
 21. Mitchell CG, Perloff J, McVicker J, Ebbert S, Petersen L, Oltean A. Integrating prevention in residential and community care settings: A multidimensional program evaluation. *AIDS Educ Prev* 2005;17(Suppl A):89-101.
 22. Grodensky CA, Golin CE, Boland MS, Patel SN, Quinlivan EB, Price M. Translating concern into action: HIV care providers' views on counseling patients about HIV prevention in the clinical setting. *AIDS Behav* 2008;12:404-411.
 23. Metsch LR, Pereyra M, del Rio C, et al. Delivery of HIV prevention counseling by physicians at HIV medical care settings in 4 US cities. *Am J Public Health* 2004;94:1186-1192.
 24. Wilson TE, Vlahov D, Crystal S, et al. Integrating HIV prevention activities into the HIV medical care setting: A report from the NYC HIV Centers Consortium. *J Urban Health* 2006;83:18-30.
 25. Chillag K, Bartholow K, Cordeiro J, et al. Factors affecting the delivery of HIV/AIDS prevention programs by community-based organizations. *AIDS Educ Prev* 2002;14(3 Suppl A):27-37.
 26. Sebesta DS, Marx R, Liu Y. HIV prevention case management in San Francisco: Barriers to successful implementation. *AIDS Care* 2006;18:345-355.
 27. Bluespruce J, Dodge WT, Grothaus L, et al. HIV prevention in primary care: Impact of a clinical intervention. *AIDS Patient Care STDs* 2001;15:243-253.
 28. Mitchell CG, Linsk NL. Prevention for positives: Challenges and opportunities for integrating prevention into HIV case management. *AIDS Educ Prev* 2001;13:393-402.
 29. Fleming MF, Mundt MP, French MT, Manwell LB, Staufacher EA, Barry KL. Brief physician advice for problem drinkers: Long-term efficacy and cost-benefit analysis. *Alcohol Clin Exp Res* 2002;26:36-43.
 30. Bertholet N, Daepfen JB, Wietlisbach V, Fleming M, Burnand B. Reduction of alcohol consumption by brief alcohol intervention in primary care: Systematic review and meta-analysis. *Arch Intern Med* 2005;165:986-995.
 31. Reinert DF, Allen JP. The Alcohol Use Disorders Identification Test (AUDIT): a review of recent research. *Alcohol Clin Exp Res* 2002;26:272-279.
 32. Maisto SA, Saitz R. Alcohol use disorders: Screening and diagnosis. *Am J Addict* 2003;12(Suppl 1):S12-S25.
 33. Moyer A, Finney JW, Swearingen CE, Vergun P. Brief interventions for alcohol problems: A meta analytic review of controlled investigations in treatment-seeking and non treatment-seeking populations. *Addiction* 2002;97:279-292.
 34. Fleming M, Manwell LB. Brief intervention in primary care settings: A primary treatment method for at-risk, problem, and dependent drinkers. *Alcohol Res Health* 1999;23:128-137.
 35. Fleming MF. Strategies to increase alcohol screening in health care settings. *Alcohol Health Res World* 1997;21:340-347.
 36. National Institute on Alcohol Abuse and Alcoholism (NIAAA). Helping Patients Who Drink Too Much. A Clinician's Guide. <http://pubs.niaaa.nih.gov/publications/Practitioner/CliniciansGuide2005/guide.pdf> (Last accessed January 23, 2009).
 37. Babor T, Higgins-Biddle J, Higgins P, Gassman R, Gould B. Training medical providers to conduct alcohol screening and brief interventions. *Subst Abus* 2004;24:17-26.
 38. Barta SK, Stacy RD. The effects of a theory-based training program on nurses' self-efficacy and behavior for smoking cessation counseling. *J Contin Educ Nurs* 2005;36:117-123.
 39. Kviz FJ, Clark MA, Prohaska TR, et al. Attitudes and practices for smoking cessation counseling by provider type and patient age. *Prev Med* 1995;24:201-212.
 40. Lane C, Huws-Thomas M, Hood K, Rollnick S, Edwards K, Robling M. Measuring adaptations of motivational interviewing: The development and validation of the behavior change counseling index (BECCI). *Patient Educ Couns* 2005;56:166-173.
 41. Ockene J, Wheeler E, Adams A, Hurley T, Hebert J. Provider training for patient-centered alcohol counseling in a primary care setting. *Arch Intern Med* 1997;157:2334-2341.
 42. Zapka J, Fletcher K, Ma Y, Pbert L. Physicians and smoking cessation. *Eval Health Prof* 1997;20:407-427.

43. Aalto M, Pekuri P, Seppa K. Primary health care nurses' and physicians' attitudes, knowledge and beliefs regarding a brief intervention for heavy drinkers. *Addiction* 2001;96:305-311.
44. Hudmon KS, Kroon LA, Corelli RL, et al. Training future pharmacists at a minority educational institution: Evaluation of the *Rx for Change* tobacco cessation training program. *Cancer Epidemiol Biomarkers Prev* 2004;13:477-481.
45. Laschinger H, Tresolini C. An exploratory study of nursing and medical students health promotion counseling self-efficacy. *Nurse Educ Today* 1999;19:408-418.
46. Lorenz R, Gregory R, Davis D. Utility of a brief self-efficacy scale in clinical training program evaluation. *Eval Health Prof* 2000;23:182-193.
47. Poirier MK, Clark MM, Cerhan JH, Pruthi S, Geda YE, Dale LC. Teaching motivational interviewing to first-year medical students to improve counseling skills in health behavior change. *Mayo Clin Proc* 2004;79:327-331.
48. Mark TL, Kranzler HR, Song X. Understanding US addiction physicians' low rate of naltrexone prescription. *Drug Alcohol Depend* 2003;71:219-228.
49. Stajkovic AD, Luthans F. Self-efficacy and work-related performance: A meta-analysis. *Psychol Bull* 1998;124:240-261.
50. Myers JJ, Rose CD, Shade SB, Koester KA, Maiorana A, Malitz F, Steward WT, Morin SF. Sex, risk and responsibility: Provider attitudes and beliefs predict HIV transmission risk prevention counseling in clinical care settings. *AIDS Behav* 2007;11(5 Suppl):S30-38.
51. Callahan EJ, Flynn NM, Kuenneth CA, Enders SR. Strategies to reduce HIV risk behavior in HIV primary care clinics: Brief provider messages and specialist intervention. *AIDS Behav* 2007;11(5 Suppl):S48-57.
52. Koester KA, Maiorana A, Vernon K, Myers J, Rose CD, Morin S. Implementation of HIV prevention interventions with people living with HIV/AIDS in clinical settings: challenges and lessons learned. *AIDS Behav* 2007;1(5 Suppl):S17-29.
53. Nollen C, Drainoni ML, Sharp V. Designing and delivering a prevention project within an HIV treatment setting: lessons learned from a specialist model. *AIDS Behav* 2007;11(5 Suppl):S84-94.
54. Aharonovich E, Hatzenbuehler ML, Johnston B, et al. A low-cost, sustainable intervention for drinking reduction in the HIV primary care setting. *AIDS Care* 2006;18:561-568.

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