

Providers' HIV Prevention Discussions with HIV-Seropositive Injection Drug Users

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Abstract Public health agencies have recommended incorporating HIV prevention counseling into the medical care of persons living with HIV/AIDS. Injection drug users (IDUs) especially need HIV risk-reduction counseling because of their high risk for HIV transmission through both sexual and injection behaviors. The objective of this study was to assess the prevalence of, and patient factors associated with, the delivery of HIV prevention messages to HIV-seropositive IDUs in primary care settings. A majority of participants reported having an HIV prevention discussion with their provider during their most recent primary care visit. Factors significantly associated with report of such discussion were being Hispanic or non-Hispanic Black; high school education or less; and better perception of engagement with provider. Medical providers should provide prevention messages to all HIV-seropositive IDUs, regardless of demographic factors. Effective HIV prevention interventions in primary care settings, including interventions to improve patient-provider communication, are needed for HIV-seropositive IDUs.

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Introduction

Ever since the widespread introduction of HAART, the treatment of HIV/AIDS has taken on many characteristics of a chronic treatable medical condition, requiring regular medical monitoring and lifestyle changes to minimize risk of transmission. Recognizing the importance of primary care in the management of HIV illness, recommendations have recently been issued for incorporating HIV prevention counseling into the medical care of persons living with HIV/AIDS [3].

Providers are a logical source of prevention messages for their HIV-seropositive patients. Physicians, nurses, and other providers are often viewed as a trusted source of health information and have regular opportunities to incorporate prevention efforts into the primary care experience [6, 13, 15].

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In a recent clinical trial, a brief provider-initiated prevention intervention resulted in reduced HIV transmission behaviors among HIV-seropositive patients. [18].

HIV care settings are becoming increasingly important for delivering prevention messages to HIV-seropositive persons [10]. Despite published strategies for provider delivery of risk-reduction counseling to HIV-infected persons, only 54–75% of physicians reported delivering at least one-time “safer sex” prevention messages to HIV-infected patients, usually at the initial evaluation [11, 10, 16, 15]. Only 14–36% reported reinforcing these initial prevention messages for established patients during subsequent visits [8, 15]. Confidence in delivering prevention messages varies greatly among physicians. Two studies showed that infectious disease physicians (compared with family, general, and internal medicine physicians) are less likely to deliver prevention counseling to their HIV-seropositive patients [19, 7].

Focusing HIV risk-reduction counseling on HIV-seropositive injecting drug users (IDUs) may be especially beneficial as this population may engage in HIV transmission risk behaviors associated with sexual behavior and injection drug use. IDUs also account for a fairly large percentage of people with AIDS. In 2002, 36% of the women living with AIDS in the United States and 23% of the men (31% when gay/bisexual IDUs are categorized as IDUs) were IDUs [2]. Numerous published studies estimate that one fifth to one half of HIV-seropositive injection drug users engage in unprotected intercourse and/or unsafe injecting risk behaviors [4, 12, 14, 21, 22].

The prevalence of the delivery of prevention messages in primary care settings to HIV-seropositive IDUs has not been reliably established. This information would be important to inform interventions to increase provision of such messages as well as identify patient-sub-groups who are in need of prevention messages. We therefore sought to better understand provider counseling to reduce HIV transmission among HIV-seropositive IDUs and report on results from a four-city study of this population.

Methods

We analyzed baseline data from the Intervention for Seropositive Injectors-Research and Evaluation (INSPIRE), a randomized controlled study of HIV-seropositive, street- and clinic-recruited IDUs. A detailed description of Project INSPIRE and its methods has been reported elsewhere [17].

Participants

All Project INSPIRE participants who completed baseline assessments including verification of HIV seropositive status were included in the study. Data from participants who

reported a primary healthcare visit in the previous 6 months (“in care”) were included in the outcome analysis. Primary health care visits were defined as “a visit to a doctor or medical provider to have a check up on how you’re doing with your HIV or AIDS, (which may include) discussion about HIV or AIDS medications, or blood test results.”

Study measures

We focused on one dependent variable, participants’ reports of prevention discussions with their provider at their most recent primary healthcare visit. This dichotomous variable was coded as positive if a participant reported that the provider discussed ways to decrease HIV transmission to either sex partners or drug-using partners, and negative if the participant reported that the provider did not discuss HIV transmission to either of these types of partners. The questions were as follows: (1) “At your most recent primary healthcare visit, did you and your healthcare provider or doctor discuss ways to decrease the spread of HIV to your sexual partners? (Y/N)” and (2) “At your most recent primary healthcare visit, did you and your healthcare provider or doctor discuss ways to decrease the spread of HIV to others while using drugs? (Y/N).” The recall period for these questions was the 6 months prior to the baseline assessment date.

Demographic variables included study site, gender, sexual orientation, age, race/ethnicity, education level (\leq or $>$ high school), annual income ($<$ or \geq \$5000), health insurance status, employment status, disability, and homelessness.

HIV clinical variables included time since diagnosis, current prescription for any antiretroviral medications, usual care site (doctor’s office/clinic or emergency room), satisfaction with care (satisfied or very satisfied, 4-point Likert scale), importance of care very important, (4-point Likert scale), most recent CD4 count and viral load.

The sexual and drug risk variables were measured as dichotomous summary variables indicating whether the participant reported having had any unprotected sex or having shared any needles or drug paraphernalia with partners of HIV-negative or unknown status during the past 3 months.

There were six psychosocial measures included in the analysis: *perceived engagement with provider* (13 items, score range 1–4, $\alpha = 0.95$) had items such as, “My healthcare provider or doctor listens to me, . . . answers my questions, . . . involves me in decisions” [1]. Depression was assessed using the *brief symptom inventory-depression* (7 items, score range 1–5, $\alpha = 0.88$ [5]).

Empowerment (28 items, score range 1–4, $\alpha = 0.76$) included items such as, “I see myself as a capable person”, or “I am usually confident about the decisions I make” [19]. *Self-perceived health* (6 items, score range 0–2, $\alpha = 0.87$) examined self-reported limitations in the performance of any

activities of daily living; e.g., grooming, bathing, or dressing [20].

Self-efficacy to disclose drug use to providers and active engagement in healthcare were measured with scales developed specifically for the INSPIRE study. These scales were included based on the fact that IDU's are often described as disenfranchised or powerless. The *self-efficacy to disclose drug use to provider* scale was composed of 6 items (score range 1–5, $\alpha = 0.91$): (1) “I can tell my healthcare provider that I use drugs if they ask me”; (2) “I can tell a healthcare provider who seems judgmental that I use drugs”; (3) “I can tell a healthcare provider that I used to use drugs”; (4) “I can tell a healthcare provider who seems caring that I use drugs”; (5) “I can tell my healthcare provider that I use drugs even if they don't ask me”; and (6) “I can tell a healthcare provider that I use drugs even if they seem to be in a hurry.”

The *taking control of health* scale was composed of 7 items (score range 1–4, $\alpha = 0.63$): (1) “I make and keep my appointments with my healthcare provider every 3 to 4 months”; (2) “I don't ask my healthcare provider about my treatment options”; (3) “I keep a list of symptoms to tell my healthcare provider”; (4) “I don't write down questions before seeing my healthcare provider”; (5) “I ask my healthcare provider to explain a word that I don't know”; (6) “I'm sometimes too high or dope sick when I go to the healthcare provider”; (7) “I tell my healthcare provider my symptoms.”

All psychosocial measures were scored by summing the individual responses and dividing by the number of scale items. For consistency with the other psychosocial scales, the perceived engagement with provider scale was reverse scored so that a higher score indicated better communication. For consistency of recall periods, only participants who answered the following question with a value greater than zero were included in the analysis: “How many primary health care visits have you had in the past 6 months?”

Statistical analysis

We calculated frequencies for each of the independent variables by primary care encounter within the past 6 months. Categorical variables were expressed as proportions and continuous variables expressed as means with standard deviations.

We then examined associations between the *prevention discussion* and independent variables in univariate analyses and multiple logistic regression models. Variables that were significant in the univariate analysis at the value of $p \leq 0.2$ were included in the logistic regression model. Generalized estimating equations (GEE) were used in the multivariate

logistic regression to capture correlation induced by clustering within site. Empirical standard errors calculated from the GEE were used for all tests from the multivariate logistic regression analysis. Covariates were assessed for collinearity and interactions; none were identified.

Results

At baseline of Project INSPIRE, 870 (74.9%) of 1,161 participants were “in care” based on reporting at least one primary health care visit during the past 6 months. There were 231 participants categorized as “not in care” and 60 participants had missing data.

A comparison of characteristics of the “in care” and “not in care” groups is shown in Table 1. In general, the “not in care” group was more disadvantaged in terms of 1 or more variables across all variable domains. They were more likely to be from racial-ethnic minorities; to be less educated; to report less income; to be without health insurance; and to report homelessness in the past. The “in care” participants were more likely to be currently receiving antiretrovirals; to receive care in a doctor's office or clinic; to be satisfied with their healthcare and to consider it very important. The “in care” participants were more likely to be in drug treatment programs and were less likely to report risky sexual behaviors with HIV-negative or unknown status partners. This group scored significantly higher on the *empowerment* and *taking control of health* scales compared to the “not in care” group.

The results of the univariate analysis, expressed as crude odds ratios (crude ORs) with 95% CIs are shown in Table 2. The following variables were positively associated (at least $p < 0.20$) with having a prevention discussion with a provider: self-identified heterosexual orientation, non-White race, lower educational level and income, HIV care considered very important, better perceived engagement with provider, and feeling more in control of one's health. Older age and years since HIV diagnosis were inversely associated with having a prevention discussion.

The results of the multiple logistic regression analysis are shown in Table 3. Participants were more likely to report having had a prevention discussion at their most recent primary care visit if they were Hispanic (adjusted OR = 2.28; 95% CI = 1.37, 3.82) or non-Hispanic Black (adjusted OR = 2.22; 95% CI = 1.71, 2.89); or had less than a high school education (adjusted OR = 1.86; 95% CI = 1.27, 2.72), or consider HIV care very important (adjusted OR = 1.77; 95% CI = 1.31, 2.37). One psychosocial correlate was retained in the model as significantly associated with self-report of a prevention discussion at the most recent primary care visit: better perceived engagement with provider (adjusted OR = 1.74; 95% CI = 1.17, 2.57).

Table 1 Characteristics of project INSPIRE participants who were in care compared to those who were not in care at the baseline assessment. ($N = 1101$)

	In care ($N = 870$) ^{a,b}		Not in care ($N = 231$) ^b		Test statistics ^c
	N	%	N	%	
Site					
Baltimore	241	(27.7)	61	(26.4)	44.7**
Miami	187	(21.5)	95	(41.1)	
New York	223	(23.3)	27	(11.7)	
San Francisco	219	(25.2)	48	(20.8)	
Demographic					
Gender					
Male	533	(61.3)	127	(55.0)	3.0
Female	312	(35.9)	96	(41.6)	
Transgender	25	(2.9)	8	(3.5)	
Heterosexual	623	(71.9)	153	(66.5)	2.5
Age in years ^a	42.6	(6.6)	40.4	(6.7)	-4.6**
Race/ethnicity					
non-Hispanic White	88	(11.2)	17	(8.1)	4.4
non-Hispanic Black	543	(69.4)	161	(76.7)	
Hispanic	152	(19.4)	32	(15.2)	
Education					
High school or less	625	(72.0)	193	(83.6)	12.8**
>High school	243	(28.0)	38	(16.5)	
Income <\$5000/ year	427	(50.1)	138	(62.2)	10.2**
Health insurance	665	(82.5)	113	(54.6)	72.0**
Employed	48	(5.5)	9	(3.9)	0.98
Disability	549	(63.3)	93	(40.3)	40.0**
Homeless	265	(30.6)	95	(41.9)	10.3**
HIV/AIDS					
Years since HIV diagnosis ^a	9.3	(4.9)	8.8	(5.6)	-1.3
HIV medications-current	557	(64.0)	57	(24.7)	114.6**
Usual care site					
Emergency room	168	(19.7)	82	(36.4)	28.2**
Clinic/MD office	687	(80.4)	143	(63.6)	
Satisfied with HIV care	799	(91.9)	90	(88.2)	1.6
HIV care very important	769	(88.5)	79	(78.2)	8.7**
CD4 count <200	508	(58.4)	202	(87.5)	67.3**
Viral load detectable (>50 copies/ml)	257	(69.1)	20	(76.9)	0.71
Sex/drug risk					
Outpatient drug treatment	402	(46.2)	70	(30.3)	18.9**
Recent crack use	411	(65.5)	112	(68.7)	0.62
Risky sex with HIV-negative/unknown	213	(25.2)	87	(39.0)	16.7**
Needle/works sharing with HIV-negative/unknown	234	(27.5)	66	(29.0)	0.19
Psychosocial^a					
BSI-D	2.08	(0.89)	2.10	(0.96)	0.31
Empowerment	2.87	(0.27)	2.79	(0.28)	-3.81**
Taking control of health	2.97	(0.54)	2.82	(0.54)	-2.66**
Engagement with provider	1.45	(0.59)	1.54	(0.58)	1.47
Self-perceived health	0.85	(0.53)	0.81	(0.53)	-0.96
Self efficacy to disclose drug use to provider	3.93	(0.88)	3.82	(0.89)	-1.26

^amean (SD).^bColumn totals may not equal total number of participants due to missing values.^c χ^2 test or two sample t -test.* $p < .05$.** $p < .01$.

Table 2 Results of the univariate analysis of baseline study variables: unadjusted odds ratios (cOR) with 95% confidence intervals (95% CI) associated with the prevention discussion outcome for project INSPIRE participants in care ($N = 869$)

	Prevention discussion $N = 565^b$ (%)	No prevention discussion $N = 304^b$ (%)	cOR	95% CI
Gender				
Male	344 (60.9)	188 (61.8)	1.22	0.54, 2.77
Female	206 (36.5)	106 (34.9)	1.30	0.56, 2.98
Transgender	15 (2.7)	10 (3.3)	Reference	
Heterosexual	420 (74.6)	203 (67.0)	1.45 *	1.07, 1.96
Age in years ^a	42.4 (6.5)	42.9 (6.7)	0.99	0.97, 1.01
Race/ethnicity				
Hispanic	105 (20.2)	47 (17.9)	2.62**	1.52, 4.52
non-Hispanic Black	375 (72.1)	168 (64.1)	2.62**	1.66, 4.15
non-Hispanic White	40 (7.7)	47 (17.9)	Reference	
Education <high school	434 (77.1)	190 (62.5)	2.02**	1.49, 2.74
Income <\$5000/year	307 (55.5)	120 (40.1)	1.86**	1.40, 2.48
No health insurance	98 (18.7)	43 (15.4)	1.27	0.86, 1.87
Unemployed	530 (93.8)	291 (95.7)	0.68	0.35, 1.30
Years since HIV diagnosis ^a	9.0 (5.0)	9.8 (4.7)	0.97 *	0.94, 0.99
HIV medications-current	366 (64.8)	190 (62.5)	1.10	0.83, 1.47
Usual care site-emergency room	115 (20.7)	115 (17.8)	1.21	0.84, 1.73
Satisfied with HIV care	521(92.2)	277 (91.4)	1.11	0.67, 1.84
HIV care very important	516 (91.3)	252 (83.2)	2.13**	1.40, 3.24
CD4 count <200	339 (60.0)	169 (55.6)	1.20	0.90, 1.59
Viral load detectable (>50 copies/ml)	164 (69.8)	93 (67.9)	1.09	0.69, 1.72
Outpatient drug treatment	259 (45.8)	142 (46.7)	0.97	0.73, 1.28
Recent crack use	269 (66.4)	142 (63.7)	1.13	0.80, 1.59
Risky sex with HIV-negative/ unknown partner	132 (24.0)	81 (27.6)	0.82	0.60, 1.14
Needle/works sharing with HIV-negative/unknown partner	150 (27.2)	84(28.2)	0.95	0.69, 1.30
Engagement with provider ^a	3.6 (0.5)	3.4 (0.7)	1.65**	1.31, 2.08
Depression: BSI-D ^a	2.1 (0.9)	2.1 (0.8)	1.03	0.88, 1.20
Empowerment ^a	2.9 (0.3)	2.9 (0.3)	0.67	0.40, 1.13
Self-perceived health ^a	0.8 (0.5)	0.9 (0.6)	0.91	0.70, 1.18
Self-efficacy: disclose drug use to provider ^a	3.9 (0.9)	3.9 (0.9)	1.02	0.87, 1.20
Taking control of health ^a	3.0 (0.6)	2.9 (0.5)	1.29	0.99, 1.66

^amean (SD).

^bColumn totals may not equal total number of participants due to missing values.

* $p < 0.05$.

** $p < .01$.

Discussion

In this study, approximately two thirds (65%) of HIV-seropositive IDUs reported having discussed HIV prevention with their provider at their most recent primary care visit. This finding is comparable to or even higher than results from previous studies [11, 15, 16]. In a study of HIV-seropositive patients in San Francisco and New York City, 77% reported having had a discussion of safer sex with their provider [11]. In a recent study of HIV-seropositive persons at clinics funded under the Ryan White CARE Act in 9 states,

Morin *et al.*, reported that 53% of participants reported having discussed safer sex and prevention of HIV transmission with their providers within the past 6 months. In a study of HIV providers by Metsch *et al.*, 60% of providers reported delivering risk-reduction counseling to more than 90% of their newly diagnosed patients. However, that figure dropped to only 14% of providers who delivered such counseling to more than 90% of their established patients. Compared with the 65% of participants who reported having discussed HIV prevention, more than 80% reported having discussed HIV treatment. Of the participants in our analysis, only 9.9%

Table 3 Results of the multiple logistic regression analysis: adjusted odds ratios (aOR) with 95% confidence intervals (95% CI) for Self-report of a prevention discussion at the most recent care visit by project INSPIRE participants in care^a

Variable	aOR	95% CI
Gender		
Male	0.62	0.14, 2.85
Female	0.57	0.10, 3.28
Transgender	Reference	
Age in years	0.98	0.96, 1.00
Race/ethnicity		
Hispanic**	2.28	1.37, 3.82
Non-Hispanic Black**	2.22	1.71, 2.89
Non-Hispanic White	Reference	
Heterosexual	1.24	0.97, 1.59
Education ≤ high school**	1.86	1.27, 2.72
Income <\$5000/year	1.28	0.93, 1.76
Years since HIV diagnosis	0.97	0.94, 1.04
HIV care very important**	1.77	1.31, 2.37
Empowerment	0.62	0.32, 1.17
Engagement w provider**	1.74	1.17, 2.57
Taking control of health	1.30	0.95, 1.79

^aNumber of observations used = 741; prevention discussion: yes = 496, no = 245.

* $p < 0.05$.

** $p < .01$.

received their diagnosis during the 3 years prior to baseline. Thus, it appears unlikely that prevention messages associated with initial visits could explain the relatively high prevalence of self-reported prevention discussions in this population.

According to the regression model developed from our data, several participant characteristics were associated with reporting a prevention discussion with their provider at their most recent primary care visit. Hispanics and non-Hispanic Blacks were nearly twice as likely as non-Hispanic Whites to report such discussions. Participants with less than a high school education were nearly twice as likely as those with a higher level of education to report a prevention discussion. According to the univariate analysis, low-income participants were also more likely to report a prevention discussion; however, this variable was not retained in the final multiple logistic regression model.

There are several possible explanations for our findings. Providers may select patients that they feel most need prevention messages. Providers may consider patients from racial/ethnic minorities, low education, and low income groups to be less informed about HIV transmission prevention strategies or to be more likely to encounter health system barriers in general. Providers may also perceive patients from these groups to be more likely to engage in high-risk behaviors. This is consistent with findings from other studies that have shown that providers often have preconceived notions about the risk-taking behaviors of their HIV-seropositive patients

[11, 10, 15, 16]. Conversely, providers specializing in HIV care may be less likely to stereotype their patients' readiness to engage in behavior change on the basis of demographic characteristics. Finally, social desirability may have led participants from vulnerable populations to report having had a prevention discussion with their provider regardless whether they could recall one.

We also found that participants who were significantly more likely to report having had prevention discussions with their provider during their most recent visit considered HIV care to be very important and scored higher on the perceived engagement with provider and taking control of health (univariate analysis only) scales. Participants with these characteristics may be more comfortable discussing sensitive issues with providers and may be more actively involved in their HIV care encounters. Also, these patients could be more positively perceived by their providers, leading to more interactions regarding HIV transmission prevention as well as other care issues.

Several study limitations should be considered. First, because this was a cross-sectional analysis, inferences regarding causality based on observed associations cannot be made. Second, all data were obtained by participants' self-report. Participants may have recalled prevention discussions accurately, but independent external data such as provider report or medical encounter documentation would be needed to validate the self-report data. Such validation data were not collected for this study. Also, it is possible that a social desirability bias resulted in over reporting of prevention discussions by all or part of the participants. Finally, data regarding specific content of prevention discussions were not available, so a brief statement by providers could have been reported by participants as a prevention discussion. It should be noted that failure to report a prevention message at a recent care visit does not, in and of itself, indicate a deficiency in providers' prevention efforts. Despite the wording of the question emphasizing recall of primary care visits, participants may have recalled a visit for a specific concern, to briefly discuss medication or laboratory findings, or even for an acute illness. Such visits may not be appropriate for prevention discussions and therefore may not reflect a provider's general prevention efforts with patients.

Nevertheless, these findings are important because of the relatively large study population of IDUs and because of the dearth of published reports on primary care prevention counseling among HIV-seropositive IDUs. Clearly, according to these findings, there is much still to be done to improve the provision of prevention messages during primary care encounters to HIV-seropositive IDUs. Further study is needed to develop effective HIV prevention interventions for primary care and strategies to integrate them into time-constrained HIV primary care encounters for this unique and high-risk patient group. Such interventions should be

directed to patients according to risk behavior assessment rather than demographic factors. Also, interventions should include components intended to improve patient-provider communication.

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