

# Counseling to Reduce High-Risk Sexual Behavior in HIV Care: A Multi-Center, Direct Observation Study

Tabor E. Flickinger, MD, MPH,<sup>1</sup> Stephen Berry, MD,<sup>2</sup> P. Todd Korthuis, MD,<sup>3</sup> Somnath Saha, MD,<sup>4</sup> M. Barton Laws, MD,<sup>5</sup> Victoria Sharp, MD,<sup>6</sup> Richard D. Moore, MD,<sup>7</sup> and Mary Catherine Beach, MD<sup>7</sup>

## Abstract

A key opportunity to reduce HIV transmission lies with healthcare providers counseling HIV-infected patients about safer sex. We audio-recorded and transcribed clinical encounters between 45 healthcare providers and 417 of their HIV-infected patients at four outpatient sites in the United States. We used logistic regressions to evaluate associations between patient and provider characteristics, and the occurrence of discussion (any talk about sex) and counseling (advice about safer sex). Of the 417 encounters, discussion of sex occurred in 187 (45% of encounters, 95% CI: 40–50%). Counseling occurred for 49% (95% CI: 35–63%) of patients reporting unsafe sex. Discussion of sex was more likely with younger or less-educated patients and with less cultural difference between patient and provider, while counseling was associated with greater provider mindfulness and lower provider empathy. These findings suggest targets to improve communication regarding sexual risk reduction in HIV care.

## Introduction

IN THE UNITED STATES, APPROXIMATELY 1.2 MILLION people are living with HIV, and an estimated 56,000 new infections occur annually.<sup>1</sup> The most recent available data suggest sexual transmission accounts for 84% of newly diagnosed HIV infections,<sup>2</sup> and unsafe sexual activity is reported by some 11–30% of those with HIV infection.<sup>3–5</sup> Fortunately, behavioral interventions are effective in reducing patients' unprotected sexual activities<sup>6,7</sup> and in reducing their acquisition of STIs.<sup>8</sup> Such promotion of safer sexual behavior by persons who are HIV-positive has the potential to decrease the incidence of HIV and sexually transmitted infections (STIs), and is the basis of efforts targeting "prevention with positives".<sup>9</sup>

Guidelines from key institutions (Center for Disease Control, Health Resources and Services Administration, National Institutes of Health, and the HIV Medicine Association of the Infectious Diseases Society of America) recommend that healthcare providers routinely discuss high-risk behaviors with their HIV-infected patients, and provide counseling to promote safer sex practices.<sup>10</sup> Sexual risk reduction counseling by healthcare providers is feasible to incorporate into

clinical settings.<sup>11</sup> Although many factors may contribute to the risk of HIV transmission,<sup>12–14</sup> some evidence suggests that counseling can play a role in decreasing high-risk behavior by HIV-infected patients.<sup>15–18</sup> Although patients reporting unsafe sex are a priority to receive counseling, patients reporting safe behavior may benefit from healthcare providers' reinforcement. Even patients who practice safe sex at one time point are at risk for engaging in unsafe behaviors if followed over time.<sup>19</sup>

Despite the effectiveness of counseling by healthcare providers to reduce patients' high-risk sexual behaviors, discussion of safer sex does not occur consistently in HIV care. Only 71% of HIV-infected patients report discussing safer sex at least once with their healthcare provider.<sup>20</sup> In recalling their most recent visit, 25% of patients discussed safer sex in general and only 6% discussed specific sexual acts.<sup>21</sup> Most studies of sexual risk counseling in HIV care have relied on self-report by patient or provider, an approach that may be subject to recall bias. However, one study by Laws et al. (2010) audio-recorded 116 HIV clinic visits in Boston, MA, and found only 17 included any discussion of sex or STIs (i.e., about 10% of visits).<sup>22</sup>

Departments of <sup>1</sup>Internal Medicine, <sup>2</sup>Infectious Diseases and <sup>7</sup>Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Departments of <sup>3</sup>Medicine and <sup>4</sup>General Internal Medicine, Oregon Health and Science University, Portland, Oregon.

<sup>5</sup>Department of Community Health, Brown University, Providence, Rhode Island.

<sup>6</sup>Center for Comprehensive Care, St. Luke's Roosevelt, New York, New York.

Using direct observation of clinical encounters in four cities across the United States, we assessed how often healthcare providers discuss high-risk sexual behavior with their HIV-infected patients, how often counseling is given regarding risk reduction, and characteristics associated with the occurrence of such discussion and counseling.

## Methods

### *Study design*

We used a mixed methods design to analyze cross-sectional data from the Enhancing Communication and HIV Outcomes (ECHO) Study, which was originally designed to assess racial/ethnic disparities in patient-provider communication.<sup>23–28</sup> Data were collected between December 2004 and January 2006, for patients and providers at four large, urban, academic outpatient clinic sites in Baltimore, Maryland; New York, New York; Detroit, Michigan; and Portland, Oregon, USA. Institutional Review Board approval was obtained at each site.

Eligible patients were 19 years or older, English-speaking, living with HIV, and had had at least one prior visit with their provider. Of the 599 patients approached for enrollment, 437 (73%) agreed to participate. Primary reasons for refusal were time constraints, not feeling well, or lack of interest.

Eligible providers were physicians, physicians' assistants, and nurse practitioners delivering care to patients at the study sites. Of the 55 eligible providers, 45 (82%) agreed to participate. Reasons for refusal were discomfort with audio-recording, and time constraints. Of the 435 total encounters, 18 were excluded due to lack of usable audio-recording; thus we had a total of 417 encounters available for study. Each patient-provider pair had one recorded encounter. The observed health care visits were routine HIV care visits with the patient's usual care provider. Visits for acute/urgent care were not included in the study.

### *Data collection*

Data collection methods for the ECHO study have previously been described.<sup>23–27</sup> After giving informed consent, participating providers completed questionnaires. Research assistants approached consecutive patients of participating providers in the clinic waiting rooms. Participants were informed that this study was examining patient-provider communication in general, not any particular topic of discussion. Thus, they were not prompted in any way to focus on sexual behavior. After obtaining informed consent from eligible patients, research assistants placed digital audio-recording devices in the exam rooms to record the encounter. After the clinic visit, patients were interviewed by research assistants.

### *Patient interview and provider questionnaire variables*

Patient interviews assessed demographics, whether patients were receiving antiretroviral therapy, the length of the patient-provider relationship, and patients' perceptions of cultural dissimilarity with their providers.<sup>26,28</sup> The cultural dissimilarity scale asked each member of the patient-provider pair to rate how similar they were on race, ethnicity, culture, skin color, values, beliefs, styles of speech and reasoning, and was reported from 1 (very similar) to 6 (very dissimilar).

Providers received two questionnaires, one at baseline and one post-visit. The providers' baseline questionnaires assessed demographics, clinician type, and measures of mindfulness<sup>29</sup> and empathy.<sup>30</sup> Mindfulness measured the providers' self-reported ability to be present in the moment, attentive and undistracted, and was reported as a summary score from 1 (low) to 6 (high). Empathy measured providers' self-reported sensitivity to the feelings and perspectives of others, and was reported as a summary score from 1 (low) to 5 (high).

The providers' post-visit questionnaires assessed cultural dissimilarity between the provider and the patient, and provider's rating of how busy the clinic schedule was on the visit day.

These patient, provider, and relationship variables were chosen for inclusion in the analysis because we hypothesized that they might be associated with patient-provider discussion about sexual behavior or counseling about sexual risk reduction.

### *Dialogue classification*

The audio-recorded clinical encounters were transcribed by a professional transcription service, and then checked for accuracy by trained research assistants. We searched the 417 transcripts for key words and text strings relating to sexual activity and STIs (e.g., "sex", "condom", "herpes") comparable to previously used search strategies.<sup>22</sup> All transcripts selected by electronic search were read by one coder to verify that dialogue was relevant to sexual risk behavior. A random sample of 20% of the remaining transcripts was read by a second coder to verify that relevant dialogue had not been missed by the electronic search.

The outcome of "discussion" was defined as any exchange of dialogue between the patient and provider on a topic related to sexual activity. The topic could be initiated by either the patient or the provider. We sought to capture whether sex was brought up at all in the encounter. We further classified these dialogues according to content from a patient-focused standpoint into one of four mutually-exclusive categories: patient denies sexual activity, patient reports safe sex, patient reports unsafe sex, or patient gives unclear indication regarding whether sex was safe. Safe sex was defined as any practice to reduce risk of HIV or STI transmission, including consistent condom use, low-risk partners (reducing number of partners, monogamy, or abstinence), and disclosure of HIV status to current or prospective partners. Indications of unsafe sex included patient reports of STI diagnosis or treatment, unprotected sexual exposure, high-risk partners (new or multiple), or nondisclosure of HIV status.

The safety of sex was classified as unclear if the discussion involved routine STI screening, ambiguous STI symptoms (for example, a lesion or discharge for which the provider considered an STI but ultimately stated that a nonsexual explanation was more probable or herpes or warts that were not specified as genital), or references to sexual behaviors with unclear safety details (for example, the patient mentioned a sexual partner but did not specify whether they were monogamous, or patient requests for erectile dysfunction medications).

We further classified encounters according to whether sexual risk reduction counseling occurred. In counseling

encounters, the provider specifically addressed the patient's sexual risk behavior by either reinforcing safe sex practices or encouraging a change in behavior toward safer practices. In missed counseling opportunity encounters, the provider did not specifically address the patient's sexual risk behavior.

A random sample of 20% of the classified encounters was rechecked by a second coder. Disagreements in classification (found in five encounters) were resolved through consensus. No disagreements occurred regarding whether counseling was coded. The disagreements were mostly around the distinction between the patient's denial of sexual activity and the patient reporting safe sex by choosing abstinence. Our consensus, after discovering that reviewers were classifying this scenario differently, was to classify as "denial" any brief exchange in which the patient denied sexual activity with no further information and to classify as "safe sex" any exchange in which the patient indicated choosing not to have sex in order to decrease risk.

#### Analysis of characteristics associated with dialogue

We coded encounters to create two dichotomous outcome variables: discussion related to sexual risk behavior (or not), and counseling regarding sexual behavior (or not). After content coding was complete, we transformed the data into counts that could then be analyzed quantitatively. We analyzed independent variables from the patient interviews, provider questionnaires, and clinical data, for association with these outcomes from the content coding. We created variables for gender concordance and age concordance (patient and provider of same age within 10 years). There were insufficient numbers of race concordant patient-provider

pairs for meaningful comparison; therefore, no variable for race concordance was used in the analysis.

For descriptive statistics of the sample, we performed *t*-tests for continuous variables, and chi-squared tests for categorical variables, to investigate associations between the patient, provider, and relationship variables, and encounters with or without discussion of sex. The unit of analysis for evaluation was the encounter, which included a patient-provider dyad.

We performed bivariate logistic regressions using discussion and counseling as two dichotomous outcomes, and the patient, provider, and relationship factors as covariates. We used generalized estimating equations (GEE) with robust variance to account for clustering of patients within providers, and adjusted for practice site as an indicator variable. In multivariable logistic regressions, we created fully adjusted models containing all patient, provider, and relationship variables. All statistical analyses were performed using STATA 11 (College Station, TX: StataCorp).

Cultural dissimilarity by patient rating and provider rating were moderately correlated. The adjusted models were run using provider rating, and then repeated using patient rating to confirm that similar results were obtained. The adjusted models were checked using Hosmer-Lemeshow goodness-of-fit tests and using multiple imputation methods to account for missing covariate data. Only 9% of observations contained any missing data, and imputation did not significantly change the results of the logistic regressions.

## Results

### Participant characteristics

The distribution of patient, provider, and relationship characteristics in the entire sample, and by whether

TABLE 1. PATIENT, PROVIDER, AND RELATIONSHIP CHARACTERISTICS PRESENTED FOR ENTIRE SAMPLE, AND BY WHETHER SEXUAL TOPIC WAS, OR WAS NOT, DISCUSSED DURING CLINIC VISIT

	Entire sample (N=417)	Sexual topic discussed (N=187)	Sexual topic not discussed (N=230)	p Value <sup>a</sup> < 0.05*
<b>Patient characteristics</b>				
Age in years, mean (SD)	45.3 (9.5)	43.5 (0.7)	46.8 (0.6)	0.0003*
Sex, % female	34	34	34	0.967
Race, % white	23	24	21	0.661
% with high school degree	72	68	75	0.091
% on anti-retroviral therapy	78	77	79	0.516
Viral load, % <75 copies/ml	48	47	49	0.705
<b>Provider characteristics</b>				
Age in years, mean (SD)	44.5 (8.2)	44.9 (0.6)	44.2 (0.5)	0.335
Sex, % female	57	60	55	0.334
Race, % white	71	73	69	0.261
Training, % physician	73	72	74	0.580
Empathy, mean (SD)	4.1 (0.5)	4.1 (0.03)	4.1 (0.03)	0.650
Mindfulness, mean (SD)	4.3 (0.8)	4.3 (0.05)	4.3 (0.05)	0.951
% with busier schedule than usual	35	33	37	0.477
<b>Relationship characteristics</b>				
% Known provider >5 years	33	28	38	0.033*
% Age concordant	61	64	59	0.240
% Gender concordant	52	51	53	0.661
Cultural dissimilarity:	3.3 (1.2)	3.1 (0.09)	3.4 (0.07)	0.034*
Patient rating, mean (SD)				
Provider rating, mean (SD)	3.8 (1.1)	3.7 (0.08)	3.9 (0.07)	0.021*

<sup>a</sup>Descriptive statistics and *p* values calculated using *t*-tests for continuous variables, and chi-squared tests for categorical variables.

discussion of sex occurred in the encounter, are shown in Table 1. Patients were predominantly male and non-white, while providers were predominantly female and white. About 60% of the patient-provider pairs had age concordance and about half had gender concordance.

*Discussion of sex*

Of the 417 encounters in which dialogue was analyzed, 187 included discussion of a sexual topic (45% of encounters, 95% CI: 40–50%). There were significant differences in three participant characteristics between those clinical encounters in which sex was discussed compared to those in which it was not: in the former, (1) patients were younger (mean age 43.5

vs. 46.8 years), (2) the patient-provider relationship was shorter (28% vs. 38% had known each other for greater than 5 years, and (3) cultural dissimilarity was lower (mean 3.7 vs. 3.9 by provider rating).

Content analysis of the dialogues showed that, in 30 of the 187 encounters, the discussion was limited to a brief denial by the patient of sexual activity. In the remaining 157 encounters, 66 patients (42%) reported engaging in sexual activity with one or more safe sex practices, 53 patients (34%) gave an indication of unsafe sexual behavior, and for 38 patients (24%) the safety of sexual behavior was unclear. Sample quotes from the dialogues in each of these categories are given in Table 2. The most commonly reported safe sex practices were consistent condom use (*n*=56 encounters),

TABLE 2. EXAMPLES FROM DIALOGUES OF DISCUSSION AND COUNSELING REGARDING SEXUAL BEHAVIOR

Category	Sexual topic discussed			
Subcategory	Brief denial of sexual activity	Safety of sex unclear	Indication of unsafe sex	Indication of safe sex
Example	<p>D: Okay. And are you currently sexually active?                      P: No, I'm not.                      D: Okay.</p>	<p>D: So are you seeing anybody?                      P: As a relationship?                      D: As a relationship, yeah.                      P: Well I have a friend. I see him off and on.                      D: Right, right.                      P: I'm sexually active, if that's the answer.                      D: Any questions about what you're doing or what any of that?                      P: No. I mean the only problem I – I keep getting this rash.</p>	<p>P: I slept with someone I shouldn't have, cuz I wasn't safe, and they were positive, so.                      D: And when was that?                      P: Um I didn't tell you last time I saw you, but it was right before I saw you last time.                      D: All right, so we saw each other-                      P: Last month.                      D: So when you were saying you didn't use a condom, was that for both insertive and receptive?                      P: Yeah.</p>	<p>D: You guys using safe sex?                      P: Always have.                      D: Condoms?                      P: Yeah, right                      D: Every time, right?                      P: Every time.                      D: What's her status? Is she positive?                      P: Uh, negative. Been together for four years.</p>
Category	Counseling regarding sexual behavior			Missed opportunity for counseling
Subcategory	Counseling occurred			
Example	<p>D: Are you sexually active?                      P: Yeah, I'm still with her dad every now and then. Every now and then.                      D: You guys use condoms?                      P: Sometimes.                      D: That's important.                      P: I know. I tell him that. I tell him and then – well you know how it is. [laughs]                      D: I know, and it's fine, it's – you want to protect yourself, too.                      P: Right.                      D: You don't want to end up with something else.                      P: Right.</p>			<p>D: So we're gonna swab your throat, okay?                      P: Don't they have to swab everything? [Laughs].                      D: Not if you didn't have anal sex, we don't. But if you did, we do.                      P: I just think the whole thing wouldn't hurt.                      D: OK.</p>

D, Provider speech; P, Patient speech.

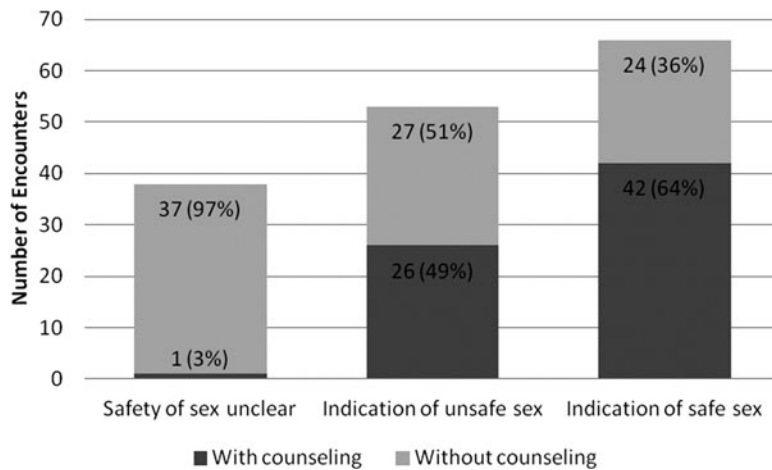


FIG. 1. Number of encounters in which patients gave indications of safe, unsafe, or unclear sexual behavior and received counseling from providers regarding risk reduction.

low-risk partners ( $n=20$ ), and disclosure of HIV status to partners ( $n=17$ ). The most common indications of unsafe sexual behavior were patient report of unprotected sexual exposure ( $n=35$ ), followed by high-risk partners ( $n=21$ ), STI symptoms or diagnosis ( $n=18$ ), and nondisclosure of HIV status ( $n=12$ ).

#### Counseling about sexual behavior

Counseling about sexual risk behavior was found in 69 out of 157 dialogues (44%). Table 2 gives sample quotes from the dialogues in which counseling occurred and in which an opportunity for counseling was missed. As shown in Fig. 1, counseling occurred in 42 of 66 encounters (64%) in which the patient reported safe sex, in 26 of 53 encounters (49%) in which the patient gave an indication of unsafe sex, and in 1 of 38 encounters (3%) in which the safety of the patient's sexual behavior was unclear.

#### Patient, provider, and relationship factors associated with discussion

The unadjusted and adjusted odds ratios of the patient, provider, and relationship characteristics on the occurrence of discussion of sex are shown in Table 3. In adjusted logistic regressions, the odds of discussion of sex were lower for older patients (OR: 0.96, 95% CI: 0.94–0.99), and for more culturally dissimilar patient-provider pairs (OR: 0.64, 95% CI: 0.47–0.86). Length of patient-provider relationship was no longer significant in the fully adjusted model. The level of patient education was significant, showing lower odds of discussion of sex with patients who completed high school versus those who did not (OR: 0.57, 95% CI: 0.36–0.91).

#### Patient, provider, and relationship factors associated with counseling

The unadjusted and adjusted odds ratios of the patient, provider, and relationship characteristics on the occurrence of counseling regarding sexual behavior are shown in Table 4. In the adjusted model, the odds of counseling regarding sexual behavior were higher with providers who had higher levels of

mindfulness (OR: 3.15, 95% CI: 1.04–9.54), and lower levels of empathy (OR: 0.14, 95% CI: 0.03–0.78).

#### Discussion

This is the first large, multi-center study to use direct observation of audio-recorded clinical encounters between HIV-infected patients and their healthcare providers to investigate the frequency and correlates of discussion of sex and counseling regarding sexual risk reduction. We found that just fewer than half of clinical encounters included discussion relevant to sex. Of particular note, during these encounters, and even when patients described unsafe sex, providers tended to miss opportunities for risk reduction counseling. Finally, we found that some patient, provider, and relationship factors were related to the presence of discussion and counseling, and this knowledge may help guide interventions to improve care quality.

In our study, counseling to reduce risk behavior occurred in just half of encounters in which the patient reported unsafe sex. Despite evidence that sexual risk reduction counseling is effective, studies of physician attitudes show a lack of self-efficacy in talking to patients about behavior change.<sup>31,32</sup> Physicians also cite discomfort with sexual topics, time constraints, concerns about state reporting requirements, and perceived risk of harming their relationships with patients as barriers.<sup>33</sup> Unfortunately, this discomfort may be creating a deficit in the quality of healthcare provided.

However, we found that counseling was more likely to be given by providers with higher versus lower levels of mindfulness. Mindfulness can be beneficial in several aspects of providers' practice, including clinical accuracy, effectively handling emotions, and dealing with stress.<sup>34</sup> In addition, mindfulness may help providers to relate better to patients, in identifying psychosocial concerns and being attuned to the patients' perspective.<sup>35</sup> Mindfulness can be improved in healthcare providers through several methods, including self-awareness exercises, reflection, and discussion of clinical experiences.<sup>36</sup> In our study, providers with higher mindfulness may have given more counseling because they were better able to pick up cues in the conversation that counseling was indicated, or may have been more aware of and better able to deal with their own emotional response to the situation.

TABLE 3. ODDS RATIOS FOR PATIENT, PROVIDER, AND RELATIONSHIP VARIABLES ON DISCUSSION OF SEXUAL TOPIC (N=417)

	Unadjusted <sup>a</sup>		Adjusted <sup>b</sup>	
	Odds ratio (95% CI)	p Value < 0.05*	Odds ratio (95% CI)	p Value < 0.05*
<b>Patient characteristics</b>				
Age in years	0.96 (0.94–0.98)	0.001*	0.96 (0.94–0.99)	0.002*
Male sex	1.01 (0.59–1.72)	0.978	1.00 (0.64–2.02)	0.863
Race (ref: white)	1.00	0.718	1.00	0.230
Non-Hispanic black	0.86 (0.50–1.48)		1.56 (0.79–3.08)	
Hispanic/Latino	0.73 (0.36–1.48)		1.11 (0.50–2.49)	
Other	0.62 (0.36–1.58)		0.80 (0.26–2.46)	
With high school degree	0.70 (0.48–1.00)	0.052	0.57 (0.36–0.91)	0.019*
On anti-retroviral therapy	0.86 (0.58–1.26)	0.430	1.06 (0.58–1.97)	0.841
Viral load < 75 copies/mL	0.93 (0.67–1.29)	0.664	1.03 (0.70–1.50)	0.898
<b>Provider characteristics</b>				
Age in years	1.01 (0.97–1.04)	0.730	1.00 (0.97–1.04)	0.863
Male sex	0.74 (0.43–1.28)	0.287	0.62 (0.28–1.35)	0.229
Race (ref: white)	1.00	0.133	1.00	0.268
Black or Latino	1.04 (0.22–4.82)		0.39 (0.09–1.80)	
Asian	0.61 (0.37–1.01)		0.67 (0.34–1.34)	
Training (physician)	0.82 (0.43–1.58)	0.555	0.79 (0.41–1.52)	0.473
Empathy	0.90 (0.51–1.58)	0.702	0.71 (0.39–1.31)	0.278
Mindfulness	0.98 (0.65–1.48)	0.934	1.02 (0.58–1.77)	0.956
Busier schedule than usual	0.86 (0.51–1.45)	0.570	0.78 (0.46–1.33)	0.362
<b>Relationship characteristics</b>				
Known provider > 5 years	0.60 (0.38–0.93)	0.023*	0.65 (0.41–1.01)	0.057
Age concordant	1.26 (0.84–1.89)	0.263	1.22 (0.80–1.87)	0.362
Gender concordant	0.92 (0.55–1.54)	0.756	1.23 (0.68–2.22)	0.499
Cultural dissimilarity <sup>c</sup>				
Higher patient rating	0.81 (0.69–0.97)	0.018*	0.75 (0.59–0.95)	0.018*
Higher provider rating	0.78 (0.64–0.96)	0.017*	0.64 (0.47–0.86)	0.003*

CI, confidence interval.

<sup>a</sup>Odds ratios, confidence intervals, and *p* values obtained using bivariate logistic regressions for each independent variable with generalized estimating equations to account for clustering of patients within providers, adjusted for practice site. <sup>b</sup>Odds ratios, confidence intervals, and *p* values obtained using multivariable logistic regressions with generalized estimating equations to account for clustering of patients within providers, adjusted for practice site and all independent variables. <sup>c</sup>Values reported for multivariable model using provider rating; patient rating run separately.

Interventions to enhance mindfulness may help providers to recognize opportunities for counseling during clinic visits.

We also found that counseling regarding patients' sexual behavior was more likely to be given by providers with lower versus higher levels of self-reported empathy. The inverse relationship between empathy and counseling may appear counterintuitive, since empathy is usually considered a favorable quality in forming patient-provider relationships. However, empathy could also make providers more sensitive to patients' discomfort in awkward conversations,<sup>37</sup> and prevent providers from offering patients advice on their behavior because of reluctance to cause offense. Prior qualitative studies have shown providers' fears of harming their relationships with patients to be a barrier to counseling about sexual risk reduction.<sup>33</sup> However, it may be possible to overcome some provider discomfort with such discussion through improved self-awareness and education in effective, non-judgmental communication techniques.

In our study, having a discussion related to sex in the first place was more likely to occur with younger versus older patients and patients with lower versus higher levels of education. Prior studies have shown higher rates of STIs among younger versus older HIV-infected patients.<sup>38–40</sup> Lower edu-

cational status has been associated with higher rates of unsafe sexual behavior<sup>41,42</sup> and STI incidence.<sup>43,44</sup> Healthcare providers may be more likely to discuss sexual topics with younger and less educated patients because they perceive these groups to be at higher risk of unsafe sexual behavior, HIV transmission, and STI acquisition; however it is important to remember that older and more educated patients may be at risk as well.

Discussion was also more likely to occur when patients and providers perceived themselves to be more culturally similar to each other, than when there was perceived cultural dissimilarity. This is a new finding, which has not previously been evaluated in analysis of sexual risk discussion. An association was seen even after adjusting for age, gender, and race. In our sample, most providers were white and most patients were non-white. Therefore, it was not possible to compare potential differences between white provider/non-white patient pairs and non-white provider/white patient pairs in ratings of cultural dissimilarity. The construct of cultural dissimilarity includes domains of race, ethnicity, and skin color, but also captures other dimensions of values, beliefs, styles of speaking and reasoning, and may be a broader measure of perceived interpersonal differences than race

TABLE 4. ODDS RATIOS FOR PATIENT, PROVIDER, AND RELATIONSHIP VARIABLES ON COUNSELING REGARDING SEXUAL BEHAVIOR (N=157)

	Unadjusted <sup>a</sup>		Adjusted <sup>b</sup>	
	Odds ratio (95% CI)	p Value < 0.05*	Odds ratio (95% CI)	p Value < 0.05*
<b>Patient characteristics</b>				
Age in years	0.99 (0.95–1.03)	0.541	0.97 (0.92–1.01)	0.164
Male sex	1.28 (0.66–2.51)	0.466	1.81 (0.72–4.50)	0.206
Race (ref: white)	1.00	0.282	1.00	0.084
Non-Hispanic black	2.06 (0.88–4.83)		2.11 (0.74–6.06)	
Hispanic/Latino	2.47 (0.65–9.31)		2.69 (0.40–17.95)	
Other	2.82 (0.46–17.28)		13.40 (1.31–137.36)	
With high school degree	1.24 (0.57–8.49)	0.590	1.60 (0.56–4.62)	0.382
On anti-retroviral therapy	0.77 (0.37–1.61)	0.489	1.01 (0.35–2.94)	0.983
Viral load < 75 copies/mL	1.67 (0.91–3.06)	0.097	1.50 (0.62–3.61)	0.371
<b>Provider characteristics</b>				
Age in years	1.05 (1.00–3.45)	0.061	1.04 (0.96–1.34)	0.310
Male sex	1.73 (0.80–3.73)	0.160	1.85 (0.59–5.82)	0.294
Race (ref: white)	1.00	0.879	1.00	0.157
Black or Latino	0.65 (0.09–4.90)		0.26 (0.03–2.63)	
Asian	1.11 (0.39–3.12)		1.49 (0.37–5.95)	
Training (physician)	0.69 (0.26–1.79)	0.440	1.96 (0.49–7.92)	0.343
Empathy	0.42 (0.16–1.06)	0.065	0.14 (0.026–0.78)	0.025*
Mindfulness	1.36 (0.76–2.45)	0.306	3.15 (1.04–9.54)	0.042*
Busier schedule than usual	0.83 (0.39–1.77)	0.629	0.68 (0.25–1.86)	0.453
<b>Relationship characteristics</b>				
Known provider > 5 yrs	1.73 (0.80–3.75)	0.163	1.66 (0.56–4.90)	0.356
Age concordant	1.57 (0.71–3.45)	0.261	1.60 (0.61–4.01)	0.357
Gender concordant	1.07 (0.57–2.01)	0.835	1.22 (0.64–2.33)	0.558
Cultural dissimilarity <sup>c</sup>				
Higher patient rating	1.16 (0.85–1.58)	0.343	1.09 (0.69–1.74)	0.707
Higher provider rating	1.21 (0.85–1.71)	0.294	1.16 (0.73–1.86)	0.525

CI, confidence interval.

<sup>a</sup>Odds ratios, confidence intervals, and *p* values obtained using bivariate logistic regressions for each independent variable with generalized estimating equations to account for clustering of patients within providers, adjusted for practice site. <sup>b</sup>Odds ratios, confidence intervals, and *p* values obtained using multivariable logistic regressions with generalized estimating equations to account for clustering of patients within providers, adjusted for practice site and all independent variables. <sup>c</sup>Values reported for multivariable model using patient rating; provider rating run separately.

alone. Although one's culture of origin is fixed, competence in cross-cultural communication may be learned.<sup>45,46</sup> Finding ways to bridge cultural gaps may help providers discuss sensitive subjects with patients.<sup>47–50</sup>

Several limitations of this study should be considered. (1) Only one encounter was recorded for each patient-provider pair. Thus we do not know whether sexual behavior was discussed in a previous clinic visit, or what the relationship was between counseling and subsequent sexual behavior. (2) Selection bias may have been present if the patients and providers in our study were not representative of their peers, though this risk was likely reduced by high rates of patient and provider participation. (3) Generalizability may be limited by the fact that only HIV clinics in urban settings were included and all participants were engaged in ongoing care.

In this, the largest direct-observation study to analyze communication about sexual behavior between HIV-infected patients and their healthcare providers, we demonstrate that providers often miss opportunities to discuss sexual behavior and to counsel their patients about sexual risk reduction. Training of HIV care providers can improve both the frequency

and quality of prevention counseling.<sup>51–53</sup> Our findings suggest that training interventions that also target providers' mindfulness or their ability to bridge cultural differences may be helpful in overcoming potential barriers to addressing high-risk sexual behavior in clinic settings. Further exploration of the roles of cultural dissimilarity, mindfulness, and empathy in patient-provider dialogue regarding sexual behavior is essential, as they offer targets for future interventions to improve risk reduction counseling, with the ultimate goal of improving sexual health for HIV-infected patients, and reducing transmission of STIs and HIV. Improving safer sex counseling, particularly for these high-risk patients, also represents an important goal in decreasing the spread of HIV.

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### Author Disclosure Statement

None of the authors have any relevant financial conflicts of interest.

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Address correspondence to:  
 Tabor E. Flickinger, MD, MPH  
 Department of Internal Medicine  
 Johns Hopkins University School of Medicine  
 2024 E. Monument Street, Suite 2-600  
 Baltimore, MD, 21287  
 E-mail: tflicki1@jhmi.edu